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HARPER & BROTHERS, PUBLISHERS, NEW YORK

HARPER'S HOUSEHOLD HANDBOOK

A GUIDE TO EASY WAYS
OF DOING WOMAN'S WORK



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HARPER'S
HOUSEHOLD HANDBOOK

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I

WASH-DAY WISDOM, NURSING, AND SICKROOM

Water: Soften hard water with either washing-soda or lye, taking care not to use too much. Turbid or milky water can be cleared to a degree with alum. Dissolve a tablespoonful in a pint of boiling water, and add a cupful to a tub. Ill-smelling water should be dashed with clear lime water—using likewise a cupful to the tub. A teaspoonful of carbolic acid to the tubful is also advisable with wash water under suspicion.

Soap: Save money and strength by getting soap in boxfuls, piling it cobhouse fashion on

a dry shelf in the air. Borax soaps chap the hands least. Naphtha soaps do the best work with cold water. Cheap yellow soaps, having much resin in them, answer very well if the clothes are well rinsed. Any sort of soap is best made into a jelly. Shave a bar, cover with boiling water, and simmer until soft. If there are very dirty things to wash, add a teaspoonful of borax in powder, and as much washing-soda to the cake of soap. This is for rubbing on dirty spots. Other things had better be washed in suds, made by putting a handful of jelly in a tub of water.

Washing Fluids: Use for boys' clothes, working-men's shirts, and overalls turpentine, kerosene, and lime water, equal quantities, shaken well together. Wet thoroughly, let stand an hour, then wash in warm suds. Turpentine and spirits of ammonia, half and half, shaken hard together, will make easier the cleansing of colored woolens.

Bleaching: Clothes that are yellow from lying should be wet in boiling water dashed with oxalic acid (see section Renovators), putting

two tablespoonfuls to the gallon. Wring out, dry in sunshine, and wash as usual. To bleach faded things white, as prints, lawns or linens, wash very clean, using extra-strong suds, then boil in a solution of cream of tartar, a heaping tablespoonful to the gallon. Boil half an hour; lift up; if not white, boil as long again. Keep the boiler filled and the garments well under water. Rinse in two waters after boiling, and dry in sunlight before ironing.

Temperature: Keep the water temperature reasonably even throughout a wash—violent alternations "full" every sort of fabric more or less. Very fine flannels washed in cold water throughout with naphtha suds—soap must never touch them—and dried quickly, hardly shrink at all. Flannels generally are best washed in blood-warm suds, with rinse water the least bit hotter. Yet the beginning of wash-day wisdom is to wet everything thoroughly with cold water before washing. Also put clothes to boil in cold water.

Mordants: Set colors before washing new garments. Most of the aniline colors require

acid—either alum water or vinegar. Put four ounces of alum to a large tub of water, or add to it a pint of strong vinegar. Soak things for ten minutes, then wash. Set madder colors with sugar of lead, putting an ounce to a gallon of hot water. Soak twenty minutes. Soak blacks, black and whites, and grays in strong salt water, but only a few minutes. Buff, tan, and gray linens keep fresh longer if well wet before washing with strong black-pepper tea.

Wash Frocks: Put no soap on wash frocks —suds suffice after spots have been removed (see section Spots and Stains). With delicate colors use bran water instead of suds. Tie wheat bran loosely in thin cloth, and rub the clothes with it. Use lukewarm water, and work quickly. Rinse instantly and hang to dry in shade, but opened out so the drying will be quick. Hang carefully—pulling while wet ruins lines, besides weakening the fabric—especially if it is starched.

Table Linen: Wash in suds, first removing stains and grease (see section Spots and Stains).

Boil only occasionally. Wash first. Never starch. Hang out very straight, warp threads across the line. Take down when barely damp, fold, keeping threads true, roll smoothly, iron dry, first on the wrong side, then on the right. Use irons below scorching heat. In ironing napkins do not pinch the folds with the iron—also iron them first the warp way. Instead of folding table cloths roll them after ironing upon heavy cardboard mailing-tubes that have been covered with white stuff and furnished with wash ribbons at the ends for tying. Tie napkins by sixes with ribbons matching those of the table cloths.

Doing Up Shirts, Cuffs, and Collars: Soak in blood-warm water until starched parts are soft, wash clean, shake out, pull all double surfaces straight, pat bosom, collars, and cuffs so the various plies will lie together, hang to dry, straight. When bone-dry fold the bosom lengthwise down the middle, dip in hot starch reinforced with gum water, rub the starch well into the cloth, wring, hang straight, slip a hand underneath the bosom and wipe over

with a damp, clean cloth, then pat well together, pin-pricking any blisters. Starch collars and cuffs the same. Let dry, then spread sheets flat, sprinkle lightly, fold tails upward, sprinkle again, then, beginning at the neck band, roll up tight and smooth and let stand an hour.

Fold lengthwise down the middle of the back, iron body, back, and front; iron sleeves from the sloped seam back; press wrist bands first upon wrong side, then on right. Do the same with the yoke and neck band—fasten it, put in bosom board, spread bosom smooth upon it, keeping threads exactly square. Wet lightly with starch water; wipe over with a damp cloth. Have an iron just below scorching heat, begin work in the middle, at the bottom, hold the bosom taut with the left hand and iron toward the neck. Go all over; if any smears come wipe off with tepid water. Do the same for wrinkles or warped spots. Hold hard along the edges—the stitching draws. Polish with a special polishing-iron, a little cooler than the others.

Iron collars and cuffs upon the wrong side until half dry. Press hard over the right side and polish. Curl collars around the iron as it moves. Finish the band before ironing the outside. With cuffs the main thing is to prevent blisters and wry corners—do that by ironing the edges first and holding them taut.

Clear Starching: For fine lawns and laces. Dip in gum water (see section Renovators) a cupful to a quart of boiling water, squeeze without wringing, and hang smoothly to dry. Take down when barely damp, roll tight and smoothly, loosen a smallish space, and pat between the hands until dry. Sprinkle lightly—with an atomizer if possible—and iron on the wrong side with moderate heat. Laces need not be ironed—in fact, should not be.

Starches: A heaped tablespoonful of raw starch to a gallon of water makes rather stiff starch—if wanted very stiff use a teaspoonful additional. Bring the water to a bubbling boil in rather a wide kettle, wet the starch smooth, and thicker than cream, in cold water; take the boiling water from fire and stir the

wetted starch into it. Stir hard—it will form no lumps, hence need no straining. A little lard put in while hot and stirred well makes things iron smoother. For starching tinted things—as écru linens or brown or buff lawns—color the water with clear coffee or hay tea before putting in the starch. Use the black starch sold in the shops for mourning prints, or any black-grounded ones. Never dip a blueing-rag in starch of any sort. Make blue-water as deep as possible, strain, and add to the hot starch. Even with liquid blue it is well to strain—specks of blueing, once dry, are hard to get out.

Curtains: Dip cream net or madras in hay tea or weak coffee water, after rinsing—this keeps the color. Make the tea by boiling a handful of bright hay in two gallons of water for twenty minutes. Strain, and add a pinch of alum in powder. Most curtains should not be starched. Many are better not ironed. Real lace curtains should be dried on sheets spread on the floor, every point pinned smooth. Or they can be clapped dry as though clear-

starched. So can net ones. Frame drying is quickest and easiest, therefore to be chosen for all but the finest sorts. Very stretchy net should be dried on sheets, lying lightly crumpled. A very little gum in the rinse water gives it more body. This applies also to madras. Iron madras on the wrong side, taking pains not to warp or stretch it. Tucks in curtains, or anywhere, need to be held taut before the iron. Sewing of any kind puckers for wetting. Put the least bit of starch in muslin ruffles to be fluted. Hold insertions the same as tucks. Iron cretonne on the wrong side, when it is barely damp. Chintz is exceptional in requiring a thin starch and in looking best when ironed on its face.

Knitted Woolens: Knitted things like scarfs, sacks, sweaters, capes must be washed quickly in white soapsuds, lukewarm, else in cold naphtha suds, rinsed, blued if white, and dried in a crumpled heap in the sun. Hanging ruins them. Very fluffy things had better be dry-cleaned or washed in gasolene. Do this also with knitted silk hoods and neck scarfs.

Lace and Embroidery: If very much soiled put in a glass or earthen vessel, cover with white soapsuds, and set all day in full sunshine. Rinse in cold water, press lace smooth between the hands, and wind it while damp about a glass jar covered with old linen. Let dry, but do not iron. Iron embroidery on the wrong side, upon its special padded board (see section Equipment). Made-up lace, as fichus, collars, and so on, must be spread smoothly upon a hard cushion, pinned, and dried in air. Things lightly soiled can be dry-cleaned by lying buried a week in corn starch mixed equally with calcined magnesia. Shake out, brush gently, and press under light weight. Moderate soiling is best remedied with gasolene, changing it as it grows dirty. Hang several days in air, under a thin cover—this takes away scent and prevents collecting dust. Silk embroidery on all grounds demands gasolene cleaning. Spots must be taken out (see section Spots and Stains) before cleaning. Press very lightly on the wrong side. Treat wool embroidery the same way. Embroidered cushion covers must

be taken off, well brushed and shaken, also turned inside out before cleaning. But clean them right side out.

Laundry Aprons: Make laundry aprons of strong stuff, but sleazy—crash, demin, or colored linen. Cut kimona shape, with roomy sleeves, and to slip on over the head. Set a deep pocket on each side, within handy reach. Set a smaller pocket across the front just below the waist. Carry clothes pins in the big pockets, safety pins, a handkerchief, and wiping-rags in the other. Make wide enough for free motion, but not enough to sag under foot when the wearer stoops. Let come almost to the instep.

Ironing-tables: Make board or table suit your height, so you need neither stoop at the work nor hunch your shoulders. Set a table too low upon bricks or blocks—if it is too high, have something stable to stand on. Make tight-fitting covers for the table of unbleached muslin, sewed double at one end, to be slipped over the table edge, and with the other end long enough to lap over and safety-pin firmly

in place. Have a double blanket under the cover, laid very smooth.

In using a board, set it high or low, as your height requires.

As to Soaking: Long soaking of clothes is undesirable—it loosens dirt but passes it throughout the fabric. An hour is sufficient. Cover things that must stand overnight with cold water rather than hot. Nursery wash in need of soaking must be kept to itself. So should things from a sickroom that are badly fouled.

As to Boiling: Boiling is not absolutely essential to clean clothes, still a means of grace toward them. Have separate boiling-bags for table linen, for handkerchiefs, for fine things like caps and collars. In boilers the best is the costliest—namely, copper. Next ranks the cheapest—a deep iron pot. Copper-bottomed tin answers with good usage. Iron pots will crack if allowed to get very hot before water is put in. Any boiler should have at least an inch of water in it before going over the fire. Likewise it must be kept clean,

dry, and wash-worthy by constant vigilance for holes and cracks.

Irons: Test by pressing your cheek against the face—if rough, reject. Five to six pounds is a good weight. Half a dozen will be none too many. Keep clean and dry. Beware of setting them face down upon live coals or red-hot iron—heat pits them microscopically, but enough to make them stick. Polishing-irons are somewhat lighter and rather different in shape. Have an asbestos pad or wire trivet to set irons on. Have several holders, if you lack a patent handle, and shift as they grow hot.

A Sickroom: Disfurnish of every unessential. Leave nothing that can be knocked off or over, or that clatters or rattles. Remove rugs from a bare floor, but keep a small one handy for the patient's feet. Cover a carpet with a smooth sheet of something washable. In case of contagion take away draperies and pictures. Have the bedstead light and firm-standing, not too low, single or of three-quarter size. Set it so there is free passage

all round it, but not so light glares into sick eyes. Place the head at least six inches from the wall, and set beside it a small solid table. A couch or single bed, a spacious dresser, a bigger table, and at most three chairs are complete equipment. Give up the dresser to the patient's clothes, bed clothes, towels, table covers, and so forth. Have three changes of clothes, a dressing-gown, a light shawl, slippers, many clean handkerchiefs. A dressing-room attached is a godsend — next to it a bathroom easily reached. Lacking either, a washstand fully furnished is necessary, also an alcohol or oil stove for hot water.

Toilet ware of white enamel is lighter and safer than china. Have in addition a foot tub and a deep covered bucket. Soaps, powder, scents at discretion—insist, though, upon clean wash clothes, a good sponge, also bottles of grain alcohol, aromatic ammonia, lavender water, and camphor. Insist also upon a demijohn of disinfectant solution—chloride of lime for ordinary illness, bichloride of mercury in cases of contagion (see section Disinfectants).

A Sickbed: Should have a good spring and a light, elastic mattress. Lay upon the mattress a pad of cotton tacked between cheesecloth, and change it daily. The mattress should have a white cover. Over the pad stretch smooth a sheet big enough to tuck in all round and be fastened underneath with safety pins. Pin the upper sheet only across the bottom, and lay a fold three inches wide in it there, to save cramping the toes. Do the same with the blankets. They should be light, not heavy. Down or puffy cotton comforts should supply extra warmth at need. Lay blankets so the upper edge will come a foot below the headboard. The sheet must be turned over them half a foot at least and be met by an outer spread light and smooth. Have a bolster rather hard, and three pillows of varying softness. Change slips daily. Change sheets likewise, save in desperate cases where the patient cannot bear moving. Space permitting, such cases should have two beds, fitted alike. Shifting can be done by setting them together and easing the sufferer on the fresh couch.

Heat and Ventilation: Open fires help mightily toward keeping a sickroom fresh. Burn wood that does not snap nor give out any pungent smell. Coal should be free-burning. Put it in small paper bags—thus it can be laid in the grate without noise or dust. Dampen ashes before removing, and keep hearth and fixtures clean by a daily washing. Keep the heat steady—the temperature that is ordered. Where there is distress of breathing, keep a clean kettle simmering on the fire, the spout turned outward—vapor softens air. Furnace heat coming through a floor register should be softened by setting on the register a small pan of water. With a wall register, fasten in front of it a big sponge, and wet it every hour or so. Radiators should have water on top, in something wide and shallow.

If windows must be opened at top, set an extra shade at the bottom with a hook to hold it in the middle of the upper casing. Roll up the top shade, lower the sash sufficiently, then raise the lower shade till the edge is level with

the edge of the sash. Thus air has free ingress without rattling the upper shade. A window which must be raised ought to have a light board pivoted into the casing, so it can be turned outward at need, letting in air but preventing draughts. With a board a foot wide raise the window about ten inches. One window open at top, another at bottom will be far more effectual than a single window spread wide. Note what is outside; if at any time smoke or the smell of food comes in, shut the window. Allow no odors in a sickroom—neither fruit, flowers, spiced food, nor scented visitors. This in severe cases; mild ones and convalescence demand no such rigors.

Care and Keeping: Keep floors clean by wiping with cloths wrung out of hot water barely dashed with carbolic acid. The smell passes quickly—and is wholesome. Take off dust with damp cloths—litter must be prevented. Keep a waste basket handy, also a bigger basket for soiled things. Have them removed at once. Put half a cup of disinfectant in any vessel before using it, adding

enough to cover discharges as soon as it has been used. Remove as quickly as possible. Do not keep such things in a closet. Rather ambush them behind a light screen set across a corner.

Have a table outside to receive trays, cups, glasses, uneaten food. Let nothing stand inside the room. The bigger table is for medicines, clean spoons and glasses, alcohol stove, and a supply of ice. Gas light fouls air so quickly, avoid it if possible. Electric light has the drawback of being hard to graduate. Oil lamps require the nicest care. Candles are better. Beware of lighting or extinguishing either inside the room. Strike no matches there if possible to avoid it. Even in lighting a fire, do it from a candle lighted outside. Keep filled candlesticks on the outer table with matches in plenty, and extinguishers handy. Take lamps there to put them out.

Ice: A nursery refrigerator is well worth its cost. Since it is not always to be had, here is a good substitute. Set a high wire trivet inside a deep agate pan, lay a lump of ice on

it, then turn over it a clean flower pot. Plug the hole in the flower pot, and cover thickly with a folded blanket if in haste. Time permitting, make a cozy of cheesecloth thickly padded with cotton batting and big enough to come to the table outside the pan. Empty the pan several times a day. With an awl and a toy hammer slivers of ice can be broken as needed.

Contagion: Filth diseases—diphtheria, typhoid, etc.—spread through effluvia. Discharges of all sorts should be deluged with bichloride (see section Disinfectants). Even bath water needs a dose of it before emptying it. All manner of soiled things—towels, sheets, clothes—must be sunk in a tub of it as soon as taken off, and soaked several hours before washing. They need to be well boiled and dried in wind and sun. Eruptive ails—measles, smallpox, scarlet fever—have two periods of danger—in the fever stage before eruption, and when peeling. Measles and smallpox are most dangerous in fever; scarlet fever at the beginning of convalescence. Rub

a patient in that stage well over with vaseline at least twice a day, bathing afterward with warm suds and putting on fresh clothes. Change bed linen the same; disinfect with extra thoroughness. Put bichloride in the water that wets the floor cloths, and be sure no dust is allowed to blow outside the room.

Disinfection: Wet everything well with bichloride solution, remove furniture, burn mattress and comforts, boil and sun blankets. Scrape walls and ceiling, wash well with bichloride, wash floor and woodwork likewise, then scour with carbolic soapsuds. Fill cracks of all sorts with fresh putty, shut doors and windows tight, and paste strips of paper around them. Take off closet doors, but leave inside. Tack a strip of tin on the door of egress so it will lie flat against the casing. Put three bricks in the middle of the floor, set an iron skillet on them, put into it a pound of flowers of sulphur, wet it with alcohol, stick in a short length of fuse, light it, go out quickly, close the door for a minute, look in—if the sulphur is burning, all is well. Shut the door

and leave undisturbed for twenty-four hours. Sulphur fumes make an end of germs. They also bleach out colors of all sort.

Poultices, Hot Cloths, Mustard Plasters: Keep in stock bags of old linen or muslin, with drawstrings at top, for poultices. Fill them three parts, draw up, and flatten. It they must be hot, have three, keeping two in a steamer, with the water underneath barely simmering. Keep cloths likewise steam-heated, take out with a fork, wrap in a thick towel, and apply over thin flannel to prevent scalding. Wet mustard poultices with white of egg to prevent blistering. If severe burning is needed, wet with pepper vinegar. Make soft and lay thin net or muslin over the face of the poultice. For a slow, gentle burning mix the dry mustard one-half with flour.

A Bandage Jar: Tear old linen into strips two to four inches wide, lap ends two inches, and sew together. Make many lengths—half a yard to five. Pull away ravelings, roll smoothly, and fasten. Put a few clean pebbles in the bottom of a glass jar, lay paper over

them, pack in rolled bandages till half full, then fill with absorbent cotton, and stand on a plate in a kettle of cold water, which is set over the fire. The water ought to reach the neck of the jar and be kept at a temperature of a hundred and eighty degrees for three hours or more. Take from fire then, screw on jar top, let cool in water, wipe, and set away.

Finger stalls in variety, with narrow tapes for tying, thus sterilized, are a help to mothers. Teach children to suck wounds or bites or stings instantly—it abates pain and takes out dirt and poison. Wash the hurt clean, unless a blood clot has formed—it is nature's own remedy, respect it. Put on a stall, hold the hurt finger up, and pour upon it either arnica, witch hazel, or turpentine. Draw the edges of a cut together, clap on adhesive plaster, and hold until the plaster sets.

Stanching Blood: Blood spurting in bright-red jets means a severed artery—and great danger. A steady, dark-red stream means a cut vein. For either, knot two handkerchiefs hard together, trace the course of

the blood vessel, put the biggest knot over it, thrust in a stick, and twist until the knot presses deep into the flesh. In case of an artery, put the knot between the hurt and the trunk. For a vein set it between the wound and the extremities. Work fast—a minute may mean life or death.

Clothes for Nursing: Wear nothing that cannot be washed; this is the first commandment. Wear nothing that rattles, rustles, or clings; this is the second, even greater. Light colors are refreshing to sick eyes, violent figures distressing. Have sleeves that can be pushed easily above the elbow, self collars, and trim fastenings. A single pin may scratch your patient. Eschew hard, starchy edges even on an apron. Wear a cap—a sweeping-cap is excellent—and change it daily. A long kimono apron slipping on over the head is useful for such work as bathing, giving alcohol spongings, or massage. One-piece frocks are imperative. The simpler and easier the better all round.

II

INSIDE A ROOM

As to Floors—Scrubbing: Sweep clean, take out grease spots and smudges (see section Spots and Stains). Have a light knee pad, clean brush, a bucket of warm water with a clean, soft cloth in it, and plenty of either sand soap or a good soap powder at hand. Scrub well with a wet brush, putting soap or powder before it. Do not slop—too much water swells boards and warps them. Scrub a strip, rinse with a cloth moderately wet, then wipe with the cloth wrung as dry as possible. Wiping thus quickly takes up the wet dirt clean. Work from each side toward the center, finishing at the door. Never use a wiping-cloth after it sheds lint.

Staining: Sweep twice—the last time with a damp cloth pinned over your broom. Give

new boards a coat of filler (see section Renovators). Let it dry, sandpaper rough spots, then give one or two coats of oil stain, using a soft brush and working with the grain of the wood. Keep both filler and stain well stirred while applying, otherwise neither filling nor color will be even. Finish with shellac.

Shellac Floors: Sweep, dust with a cloth-wrapped broom, moving it the way of the grain. Fill any cracks or crevices; then give a coat of filler, and when it is full dry two coats of shellac. Let the first coat dry for twenty-four hours before adding the second.

Waxing Hardwood Floors: Sweep and dust, rub rough spots with sandpaper, take out spots or smears—if faded spaces are left, rub them with sandpaper till a new surface appears, or touch with stain, and let dry. Go over in long strips, working from opposite sides with whatever wax you like, then rub until hot with a wooden floor pad (see section Equipment). A coat of very thin shellac makes cleaning easier, but does not rub to so

handsome a surface. Put on the shellac after the wax has stood a day.

Removing Stain or Varnish: Use very strong lye, either from wood ashes or commercial potash, with a lump of washing-soda in it. Grease the hands well, so the caustic liquor may not eat them. Apply with a big sponge or coarse soft cloth, following with a damp cloth wrung hard out of warm water.

Removing Paint: Metallic paint whose bases are white lead, zinc white, and oxides of chronium, iron, and copper mixed in oil hardens to a very adherent surface, hence differs from water colors, and has to be either burned off with a special torch or planed off. Both processes demand skilled workmen. It is better to bring old paint to a taking surface by wetting it first very well with turpentine, then, after an hour, going over it with wood alcohol and a thick, crumpled cloth. Follow the alcohol by washing with lye or strong soda water. Let dry, sandpaper rough places, then put on new paint—which it will be the part of wisdom to have at least as dark as the old.

Filling Cracks: Cracks large or small must be filled before either painting or staining, knot-holes likewise. If a crack can be seen through either, fit into it a sliver of wood before filling, or drive in fine brads, leaving the heads projecting across the opening. Bend the heads below floor level, and set the brads alternately, several inches apart. Make putty or paper dough (see section Renovators). Fill small to medium cracks with putty mixed soft enough to squeeze through a paper tube. Make the tube by rolling cornerwise a square of tough waterproof paper, fastening it, and snipping off the pointed end a very little. Use the same as a pastry bag. Else roll lumps of putty between the palms to form rather fat worms, lay the worms end to end along the crack, press them down with a putty knife, or any blunt, broad-bladed one, making the surface smooth and level. If the putty is very soft, sift a little dry whiting upon it and press it lightly. Put in paper dough with a knife or a blunt chisel or screw-driver; smooth the surface by laying on a board and beating it with a hammer.

If the dough smears under the hammering, scrape away before it hardens. Plug knot-holes with the dough, then drive brads through it, bend down the heads, and put a thin layer over them.

Cleaning Waxed Hardwood: Dust daily with a soft old silk duster, sweep with a soft broom in a clean bag once a week, following by hard rubbing with the weighted brush. Every three months go over with a flannel wet in turpentine, working very quickly, and following with a very little boiled linseed oil, applied with a clean, hot cloth. Once a year—not oftener—wash clean with weak warm borax soapsuds, wetting only a yard or so at a time and wiping dry immediately. Wax or oil afresh after the washing, and rub till very hot with a clean pad.

Cleaning Stained Floors: Wipe over hard and quickly with soft cloths wrung very dry out of hot borax soapsuds. Wipe dry and rub with a flannel slightly moistened with crude kerosene. Beware of using too much—it will streak the stain.

Tile Floors: Tile, the same as brick, stone, and mosaic floors, should be washed in warm soapsuds, taking pains not to slop, rinsed well, and rubbed dry with a thick cloth fastened firmly over a flat mop. Be sure no water is left standing—it will destroy the setting.

A Matted Floor: Sweep twice, the last time with a bagged broom. Then wipe quickly with salt water, and as quickly rinse with fresh. Both waters should be tepid. If there is grime, use borax water instead of salt. A yearly wiping with fresh, sweet milk, followed by a tepid rinsing, makes matting last longer by keeping the straw pliant. Rinsing is, however, imperative; without it the milk draws a pest of flies.

Carpeted Floors: Damp with a fine sprinkler before using a sweeper, or dip the broom tip in warm water and shake very dry. Then wipe with a thick towel pinned tight over a stubby broom, washing it out if it gets very dirty. A little borax dissolved in the sprinkling water brightens the carpet. So does fine, dry snow sprinkled on and swept off so quickly it

has not time to melt. But the best thing to renew color and freshness is clarified ox gall dissolved in blood-warm water. Wash the carpet with it, after sweeping as clean as possible, using the solution the same as suds and taking pains against slopping.

Rugs: When possible, sun rugs before sweeping, beating, or vacuum-cleaning them. Spread smooth and wipe over with warm, weak borax soapsuds, followed by a tepid rinsing. Go over both sides, and let dry well before putting down. Half yearly wipe them over either with the ox-gall solution or fresh sweet milk. Rinse after either, but wait an hour to do it. The animal matter makes the wool more alive. Beware of stretching rugs cornerwise. Hang them always with the warp threads across the line or the pole.

Walls, Windows, Ceilings—Walls: The first thing is to make them sound and firm. Fill breaks great or small with plaster (see section Renovators). Fasten loose trim neatly in place, spread tarpaulin or paper well over the floor, then with a broom or long-

handled stiff brush go over everything—walls, ceiling, woodwork, and molding. Painted walls must be washed clean before repainting. Whitewashed ones need to have as much as possible of the old whitewash swept off. Old paper must be sprayed with boiling water, let stand till soft, then scraped off. Paper will not stick to either hard-finished or whitewashed surfaces unless they are washed over with strong vinegar or strong alum water, and let dry, then sized either with glue or vegetable size (see section Renovators). Put windows in repair before touching the walls, and, of course, freshen the ceilings. Remove all the litter before beginning on the walls—the less dust there is under your new coverings, the longer they stay fresh.

Wall Hangings: Paper-hanging is so simple and easy it needs few directions. Strike a plumb line before beginning it. Suspend a compact weight by a chalked cord from the ceiling to the floor, hold it taut there, pull out the cord and let it strike back on the wall. With a beginning absolutely perpendicular

you can make your figures run straight. Have the paper trimmed in the shop, cutting the left-hand selvage. Measure in generous lengths, taking care, if there are figures, that they match exactly. Lay the lengths, face down, a dozen or so together, flat upon a table or scaffold, and cover thickly on the wrong side with paper-hanger's paste (see section Renovators). Beware of pasting too many at once —lying makes paper tender. Fold back each length on itself, pasted sides together. Open up as you apply to the wall, with the edge true with the plumb line. Smooth the middle first, taking care to leave no blisters, then work toward the edges, using a soft, clean cloth in each hand. Put on three or four lengths, then trim along the baseboard. With a border, the top is not a matter of concern, but with a molding finish it must be extra neat and firm in place. Make door and window casing serve as their own patterns, by pressing wet paper around them on the wall. If a corner out of plumb starts your paper askew, strike a new plumb line beyond it, about half a foot, split

a length of paper, trimming it so the figures shall fit those in the length already on the corner, lap it from the plumb line over the skewed length, then go on keeping the seams straight.

Choice of Paper: Here dogmatism is worse than idle. But, in a general way, remember blue in all its tones, blue-gray, and granite-gray are cool, that yellow warms a north light and goes beautifully with oak finish, that red should be eschewed except for rooms used mostly by artificial light and furnished in very dark wood, that green in all save most vivid shades is restful, that soft wood-browns are excellent indeed to soften a glaring light, that white-enameled papers, with the faintest relief of gilt in the picture moldings, make the finest possible backgrounds for old prints and etchings, and, most important, that only plain papers will bear having pictures hung upon them, unless indeed the pattern is so soft as to be indistinguishable. Bedroom papers ought to be light and cheerful, but not staring. A plain ground with a border, deep or shallow, makes a wall that does war with furnishings.

A painted wall with a cut-out border matching the ground tone is a very excellent choice for bedrooms. It gives the color value of paper, and is more sanitary and more secure against invasion.

Burlaps, Cretonne, Linen, and Silk: All are easily and quickly applied to walls, but the fitting which goes before may be a bit bothersome. Strike a plumb line same as for paper. Measure lengths, cutting so as to match figures. Aim to have the cutting, top and bottom, strike exactly in the middle of the pattern—this obviates any waste. Allow an inch for turning under top and bottom, unless the finish is to be molding—for that tack single. Have your gimp on reels so it will not snarl, and provide a great plenty of tacks. Sew lengths together on the machine, using flax thread, but not too coarse, a moderately long stitch and tension that does not draw. Take pains to match figures and fit the lengths to the wall as several are sewn together. This is trouble that may save worse, as a boggle discovered quickly is half remedied. Burlaps can

be pasted on, the same as paper. Other things must be tacked on, and the edges covered with molding or narrow gimp matching their colors. Tack loosely at first, holding the cloth smooth but taking care not to stretch it. The threads in it must run true. At inequalities of wall, as in corners, take a tuck on the wrong side, press it flat, and put a line of fine tacks in the seam. Use barely enough tacks in the wall cover to hold it firmly in place—those in the gimp, which must be set evenly and not too far apart, will secure it. Burlap, even when pasted, looks better with a line of brass tacks at top and bottom. Cloth is a fine wall covering for halls, parlors, dining-rooms, even living-rooms, if they are never slept in. But in bedrooms, no matter how careful the housekeeping, it is not desirable.

Painted Walls: To paint a clean wall requires nothing beyond a brush, a step ladder, a can of ready-mixed paint, and a right good will. Stir the paint well before taking out any, and keep it stirred well to the end. Otherwise your wall will be like Joseph's coat of many

colors—earth paints have a trick of settling, no matter what they are mixed in. Begin at the top, use steady strokes of the brush, join them well, and rub back and forth to an even, smooth surface. Paint as far as you can reach handily, then step down a rung, paint below, and repeat. A new wall will take two coats; one already painted, unless very much defaced, needs but one. The paint can be varnished after it is dry; but the self-finish is pleasanter. Calcimine is put on exactly the same as paint, but the first coat must be very thin, the second thicker than cream, and the color if any, stirred well through the last coat. Remember, with either paint or calcimine, the dry wall will show much lighter than the paint in the pot.

Whitewashed Walls: Brush off loose particles, wash grimy spots clean, take out grease spots (see section Spots and Stains), have your whitewash ready, keep it hot, do the work, if possible, in dry, sunny weather, hot or cold, and provide several brushes—long-handled, short, and medium. Have a bucket of water to stand them in when not in use. In white-

washing above your head, wear glasses and stand upon something stable. Wear also a light hat with a narrow brim, and loose, soft, wash-leather gloves. Save strain by having the whitewash pot of handy size, refilling from the main supply at need. Use either milk whitewash or indoor whitewash (see section Renovators). Wood takes up less whitewash than other things—two-thirds as much as plaster, half as much as brick or stone. Whitewash well dashed with carbolic acid is the best and most sanitary finish for the inside of cellars, stables, and outhouses generally.

Window Glazing: Take out sash, break away panes, and remove old putty. If there are whole panes guiltless of putty, take them out carefully and scrape the sash clean, the same as with a broken pane. Lay the sash face down, and fit in new panes. Set a tiny tack on each of the four sides so as to hold the panes. Then put in glazier's points—to be had at any shop. Small tacks will serve instead. Press in the points, letting them lie flat on the glass. Then lay a worm of putty

over glass and points, and smooth it in place with a blunt knife. Dip the knife now and then in cold water—and keep it wiped clean of adherent putty. Smear the glass as little as possible, and wipe away smears as quickly as made. Let lie until the putty hardens a trifle. Paint it as soon as it is firm. Otherwise it will weather and crumble. Indeed, it is the part of wisdom to paint putty over once a year.

Ceilings: Papering a ceiling it not easy, still not impossible to amateurs. It demands a tall stable scaffold almost the length of the room—boxes set upon an extension table will answer very well. Cut lengths of paper, matching the figures, paste, fold, and apply quickly. Begin work in the middle of the ceiling—thus it is easier to keep the seams true. Fasten an end lightly to the ceiling, then press lightly along the middle till you come to the other end. Sight, and if this first length is bias or crooked, loosen it and put it on straight. Press on very hard and be sure there are no blisters. Small blisters can be pin-pricked and

patted down, but big ones require to have the paper lifted bodily, the air pressed out, then the paper patted back. Ceiling paper ought to have very small figures and delicate tones, much lighter than those of the walls.

Fabrics of any sort are best applied to ceilings in separate lengths and the joins covered with heavy moldings put on with brass-headed nails. This gives much the effect of a beamed ceiling at lower cost. A ceiling that crumbles badly should have strips of smooth deal nailed fast to it at even distances. The fabric can then be tacked to these with no fear of falling.

If a ceiling is too high, never put anything striped on the wall. A heavy border apparently lowers a ceiling—all the more if it is put on several inches below the ceiling proper, and the wall space finished to match overhead.

Calcimine and Whitewash: Both are applied the same way—with soft, broad brushes slapped back and forth until no grain shows. The surface must be clean and free of loose particles. Wash off old calcimine with strong

soda water and let dry before applying fresh. Put on three coats, the same as for walls. The prepared cakes are cheap and handy, but there is more certainty and more satisfaction in home-mixing (see section Renovators).

III

EQUIPMENT AND RENOVATORS

Equipment: These things will make housework easier by saving strength and temper. Being neither costly nor cumbersome, the simplest home may well find room for them or such part of them as it needs.

A Knee Pad: Make of stout cloth twenty inches by twelve, stuff two inches thick, tack in lines to hold flat, and sew oilcloth upon the under side.

A Foot Pad: Make two feet square, stuff an inch and a half thick, and tack flat. Stand on it when ironing, washing, or preparing food. It saves strength and prevents cold feet.

A Floor Pad: For rubbing waxed hardwood or stained floors. Get a block of wood, brick-shaped, hollow the upper edges on both sides so it can be grasped, put a strap across, then

cover the lower face with many thicknesses of flannel and chamois skin. Alternate them and have leather outside. Keep dry and away from dust.

A Water Wagon: Screw castors to the corners of a board a foot square. A pail set on it can be pushed about much easier than lifted.

Broom Bags: Have a set of six—two each of crash, Turkish toweling, and outing flannel. Keep clean, and be sure the drawing-tapes are not left knotted or broken.

Brooms: Have at least two brooms—one stiff, one pliant. Choose fine straw of a greenish cast rather than yellow. Eschew painted handles; sandpaper is the remedy for rough places. Put a screw eye in the tip of the handles and hang the brooms from hooks. Wash before hanging up.

Floor Brushes: A weighted brush needs to be kept dry and clean and so set that the bristles do not crush. Choose it light rather than heavy. See that the handle is set at the angle to suit your height and that the bristles are of the very best quality.

Dust Cloths: Make of many sorts and sizes, from a foot square to half a yard. Cheesecloth, flannel, old silk, and crash—all answer well. Overcast edges loosely instead of hemming. Keep clean and dry in a box or drawer.

Dust Swabs: Tie a handful of cotton, excelsior, or even crumpled paper inside a soft cloth and about the end of a light rod. Use to dust walls, floors, and ceilings, changing the cloth as it gets dirty. Sprinkling the cloth with alcohol, turpentine, or gasolene makes it more effective where the dust is grimy.

A Silk Duster: Crumple soft old silk into a big floppy rosette and fasten to a rod. Use upon pictures and picture moldings, also on waxed floors newly polished.

Ironing-boards: Shape the blanket, sew up, and fit smoothly, letting the small end of the board project bare an inch or two. Draw taut over the wide end and sew with flax thread. Make shaped covers of unbleached cotton, open at the small end, rounded to fit the other and hemmed. Draw on a cover and

pin tight at the broad end. Let the seams come along the edge of the board. Change covers after use. Have a smaller board, similarly covered, to use when sitting down—it is laid on the knees. Have also a covered bosom board if shirts are home-ironed, and a smooth straight board of handy size, covered with two thicknesses of flannel and one of clean cotton, for ironing embroidery or anything raised.

Sprinklers: Keep a tin sprinkler with a fine rose for dampening clean clothes or sprinkling floors or carpets. If ammonia or alcohol is put into the sprinkling-water, rinse the sprinkler well before putting it away.

A Tool Box: Fill cracks with putty to keep out dampness, hinge on a cover, and furnish with a padlock. Keep in it a sharp fine saw, a hatchet, tack hammer, brace and assorted bits, chisel, monkey wrench, screw-driver, and gimlets. Also assorted brads, tacks, wire nails, screw hooks, screw eyes, and picture wire. A putty knife is useful. A T-square and foot rule are indispensable. Keep the box station-

ary, and insist that whatever is taken from it shall be put back in good condition.

A Wax Board: Cover a small clean board with flannel, sewing it firmly, rub the flannel well over with softened—not melted—paraffine, and keep for smoothing irons.

A Laundry Cabinet: Have a laundry cabinet if it is no more than starch boxes set one on the other. Keep in it starch, soap, blueing, Javelle water for stains, soap powder, washing-soda, irons and holders, the wax board, and sandpaper, which is sovereign for roughened irons. Keep also a filled pin cushion and a bundle of clean rags. Close with a roller shade instead of door or curtain.

A Clothes Drainer: Tack coarse burlap over a big wooden hoop so loosely it sags smartly. Nail stout legs to the hoop, spreading them so a tub can be set underneath. Drop clothes sopping wet from the rinse into the hoop, and save time, strength, and wear.

A Lead Swab: For use on marble, brick, or stone—especially good for removing smoke and rust stains. Sew a pound of buckshot

rather tightly inside stout canvas, tie the canvas in chamois skin, and change the leather as it grows soiled.

Sawdust: Get a peck of clean non-resinous sawdust, sift, and sun or oven-dry. Keep dry. Use on floors, also for drying and polishing intricate surfaces. Heat for use, but do not scorch.

Pine Needles: Clean pine needles, if available, should be kept for polishing floors, either hardwood or stained. Heat very slightly and strew them in front of the weighted brush or broom.

Brick Dust: Beat a soft brick to powder, sift it and keep dry. Use with a chamois dipped in oil, else upon the cut surface of a raw potato. Especially useful for spots on steel or for polishing pewter and copper.

A Wall Mop: Cut washed cheesecloth into even strips, tack as many as can be firmly fastened to the end of a light rod, and shake free of lint. Clean by dipping up and down in soapsuds or gasolene after use.

Care of Brushes: All manner of brushes,

especially floor and vegetable ones, should be washed clean, scalded by dipping to the back, no deeper, in boiling water, then dried, brush down, in open air, and kept dry. Whisk brooms should hang the same as full-grown ones, likewise hearth brooms. Stand clothes and hair brushes bristles down—this so they may not collect dust. The safest wash for them is gasolene, letting it come only to the back, not over it. Hot borax soapsuds, likewise used, clean without loosening the bristles.

Renovators—Filler for New Wood: Sift twice together half a pint of powdered corn starch and as much whiting. Stir gradually into a half gallon of raw linseed oil mixed with the same quantity of turpentine. Take care there are no lumps and keep well stirred while putting on.

Oil Stains: Use the same mixture of oil and turpentine. For cherry put into the gallon an ounce of Indian red, stir well through, test, if too pale add more color. If too deep, add oil and turpentine. Work with the wood grain in putting on any sort of stain.

Mahogany Stain: Four parts Indian red, three parts burnt sienna. Mix dry and stir evenly through the oil and turpentine. Use half sienna for a dull tone. To make stains dry quickly add a pint more turpentine and half a pint less oil.

Walnut Stain: Use burnt umber, an ounce to the gallon. A little dry ocher mixed with the umber gives a livelier tone. Red or yellow, or both, can be put in, but must be very well mixed.

Oak Stain: Raw umber is the basis of oak stain; proportion and mix like the others. Antique oak requires burnt sienna mixed well with a very little lampblack, also to have two parts of turpentine to one of oil. Apply it with a sponge or swab of cotton waste and rub into the grain lines, leaving the spaces between bare.

Wax Finish for Stained or Hardwood: Melt over boiling water half a pound of yellow beeswax with half a pint of sweet oil. Beat hard a minute, take from fire, add half a cup of turpentine, and beat until nearly cold. Keep

covered in glass or earthenware. Apply soft, but not liquid, with a clean flannel, and polish by rubbing until hot.

Dancing-wax: Used on Colonial ballrooms. Melt together over boiling water a pound of yellow beeswax and half a pint of filtered neat's-foot oil. Add resin the size of a walnut melted in half a cup of new unsalted butter. Beat well, take from fire, stir in a cup of turpentine, and keep covered. Apply soft, and polish with hard rubbing.

Furniture Polish No. 1: Equal parts of sweet oil, choloroform, and alcohol shaken hard together, rubbed on quickly, then polished by rubbing until hot.

Piano Polish: Shake hard together equal parts of sweet oil, turpentine, and vinegar. Add a very little naphtha, apply with silk or flannel, and rub hard afterward.

French Polish: For dark wood, especially old mahogany. Melt together over hot water ten parts pale resin, ten parts palm oil. Mix, take from fire, add eighty parts benzine, one part essence peppermint, and half a part es-

sence of verbena. Keep sealed in glass, away from heat. Use away from light or fire. Apply with soft old silk, and polish by rubbing with very soft silk or flannel.

The Glue Pot: Melt glue only as required. Cover dry glue with cold water after breaking up well, put salt water in the bath outside, bring to a boil, then simmer until the glue ropes a little. Thin with hot vinegar. To mend things white or light-colored, melt the clearest glue in a china cup inside a saucepan, and thin after melting with gin instead of vinegar.

To Make Glue Size: Melt a pound of glue, thin with a quart of hot vinegar, then stir well through two to five gallons hot water, according to the strength required.

Vegetable Size: Tie a gallon of wheat bran or corn-meal bran loosely in net or cheesecloth; boil for five hours in five gallons of water, filling up as it boils away. Add a lump of alum after the bran bag is removed. Apply hot to walls or wood.

Calcimine: Stir sifted whiting into strong glue size until it is thicker than cream. Clear

with a little blueing. Thin at need with boiling water. Tint with earth colors in powder. Red and yellow ocher mixed give a pinkish-cream tint; yellow alone true cream. Indian red makes pink; by adding burnt sienna the color is pinkish fawn. Yellow ocher with burnt umber gives various shades of brown. Always mix colors rather pale at first, try out on a board, then add what is lacking.

Whitewashes: Either glue or vegetable size may be the foundation. Add a big lump of salt to five gallons of size, stir well, and pour boiling hot upon half a peck of unslaked lime. Clear with Prussian blue and apply very hot. For sanitary carbolic whitewash use vegetable size, dissolving in five gallons, boiling hot, two ounces of carbolic crystals. Then pour upon the lime and mix well. Two ounces of copperas—green vitriol—dissolved instead of the carbolic acid gives a faint-yellow tinge and is a good prophylactic. To kill vermin, as in poultry houses, nest boxes, and so on, mix through a pail of hot wash five grains of corrosive sublimate dissolved in a pint of water;

put on as a first coat, and after a while give a second coat of plain whitewash.

Milk Whitewash: Stir into a gallon of sweet milk enough unslaked lime in fine powder to make it thicker than cream. Add a teacup of turpentine, stir well, and put on at once with a paint brush. This sticks to smooth wood nearly the same as paint, and can be colored with earth paints almost any shade.

Paste for Paper-hanging: Wet up smooth in cold water two tablespoonfuls of flour and stir it into a gallon of water on the bubbling boil. Stir hard to prevent lumps, add a small spoonful of tallow, cook for several minutes, then add an ounce of alum dissolved in half a pint of boiling water. Take from fire and add ten drops oil of cloves.

White Mucilage: For mending books and making scrap books. Cover clean gum tragacanth with cold water, let stand till dissolved, then add oil of cloves to keep from molding. Keep in a glass jar tightly closed. This leaves no mark.

Gum Arabic: For clear starching and shirt

bosoms. Get four ounces of dry gum, pick over carefully, throwing out dark pieces and blowing away dust. Pour upon it a pint of boiling water, let stand till dissolved, filter, and bottle. A tablespoonful added to a quart of starch gives a high gloss. Two spoonfuls in a quart of tepid water will stiffen fine lawn or muslin sufficiently and restore the new look.

Paper Dough: Crumple newspaper very soft, tear to bits, dampen, pound, and knead well, then wet with strong glue size and knead to a dough. For wall breaks, rat holes, filling yawning cracks, or rounding corners, mix in plaster of Paris at the moment of application and pound in place before the plaster sets. Mix only what can be used at once.

White Cement: Mix sifted whiting to a soft dough with white of egg, for filling small holes in white walls or cracks in ceilings. Press in with a blunt knife and smooth the surface with the blade dipped in cold water.

Sand and Plaster: Sift together fine sand and plaster, wet with hot water, and use to fill bigger breaks in a wall. Wet only a little

at a time and work quickly. Lay a board over the mortar as soon as in place, and beat with a hammer to smooth.

Putty: Sift two pounds of whiting into a bowl, make a hole in the middle, and wet with raw linseed oil, soft or stiff according to your requirements. Knead the same as dough. To keep, pack down in glass and pour a little oil over the top. Should be always on hand, as it is about the most useful of the renovators.

Cement for Glass: Cover isinglass with gin in a glass jar, set in sunshine until dissolved, then filter. It should be as clear as water. For mending colored glass rub down a trifle of oil color in a spoonful of the cement.

Sugar Cement: Cook to candy height the purest loaf sugar. Apply hot to heated edges.

Lime Water: Pour a gallon of boiling water upon a lump of quicklime the size of two fists. Stir hard, let settle, pour off the clear water, bottle, and keep corked tight.

Javelle Water: A bleach so effectual it must not touch colors. Dissolve half a pound of washing-soda in a pint of boiling water, and

add it to a quart of boiling water in which a quarter pound of chloride of lime has been dissolved. Stir, let settle, pour off clear, bottle, cork, and keep dark.

Chloride-of-lime Water: Pour a gallon of boiling water upon a pound of dry chloride. Stir well, let settle, pour off clear, bottle, and keep well corked, dark, and cool. Dissolve in wood or earthenware—metal corrodes.

Oxalic Acid: Put four ounces of crystals with half a pint cold water into a quart bottle, shake hard and often till the crystals dissolve. This makes a saturated solution. If ragged crystals remain, add a gill more cold water. Keep plainly labeled "Poison." Take care not to let it touch a scratch or fresh cut on the hands, also to keep it away from children.

Copperas Water: Dissolve a heaping tablespoonful of copperas in a gallon of boiling water. Pour through drains, sinks, or into gutters. Sprinkle bad-smelling places plentifully with it and spray it over green-scummed pools. It is an ideal disinfectant—cheap, odorless, and effectual, withal safe.

IV

CHINA, GLASS, AND FURNITURE

Washing Fine China: Never soak fine china, never wash it with scouring-soap, soap powder, nor yellow-resin soap. Unless very greasy clean with borax water. Wipe and scrape off as much soil as possible before washing. Have the water pleasantly warm—boiling water is ruinous. Rinse water should be a trifle hotter than the suds. Except in emergencies, never put on any sort of soap. Put only a few pieces at a time into the suds, wash, rinse, and stand to drain. Have a thick cloth on the draining-board—with very thin ware have another thick cloth over the pan bottom. Change suds as they grow dirty. Add hot water from time to time. Even temperature is the thing. Wipe with soft clean towels after draining well, but before the ware

is dry. Wash things in sets; as dried lay a paper napkin between, and set away the pile upon something soft. Squares of Turkish toweling are excellent.

Use a soft thick brush for relief or incised decorations or lace edges. Dip it lightly in powdered borax or white soapsuds and rub steadily but not too hard. Set things which have held milk, creams, thick soups, sauces, or gelatine compounds in clear warm water for three minutes, and rub away as much of what sticks to them as possible before putting them into the suds. Soap combined with milk or gelatine makes the water slimy, the ware sticky. Boiling water sets either milk or gelatine. If possible, rinse and wash things soiled with them as soon as empty. In wiping do not rub gilt borders—rather pat them dry.

Burnish half yearly with a swab of sifted whiting tied in soft silk. Intricate gilding may have the whiting sifted on while damp and brushed off after drying. In storing keep sets and sizes together. Set things so they will not jostle nor clatter nor tip. Stand

platters on edge in a special grooved shelf, the biggest at the back. If piled, put something between, less to save breakage than to prevent a possible chipping of glaze. Things bought in cases should be stored in them, the cases set in drawers or on low shelves. High setting invites dropping and ruinous breakage.

Ironstone and Majolica: Wash in warm (not hot) suds, with a clean soft cloth, rinse in hotter water, and wipe almost immediately. Beware of chipping, beware also of cracking glaze by setting in heat or boiling water. Such ware is porous enough to take up grease and other things. Cracked or chipped dishes should not be used except to hold things like raw fruit, bread, sandwiches, or dry stores.

Gilt and Cut Glass: Remove cream or jelly with a quick rinse, wash in suds or borax water, a little more than blood-warm, using a clean soft brush on the cuttings. Have a cloth on the pan bottom if the cutting is deep, the article of good size. Use white soap—resin soaps get into fine lines and stay there. Pass from suds into a hotter rinse water, turn over

and about, lift, turn upside down, then plunge into another water a very little hotter. If the ware is very white, the third water should have salt in it—a tablespoonful to the gallon. With glass less white, put blueing in the third water, turn about, and set upside down upon a thick cloth for three minutes, then put in a box and sift over hot fine sawdust—"jeweler's sawdust" if possible, else dust with fine whiting, set in a warm (not hot) place and leave till dry. Brush off sawdust or whiting with a stiff brush, polish lightly with soft old silk, and store when fully cool.

Glass with silver inlay or incrustation must be rubbed after washing with a chamois skin dipped in whiting. Clean decanters and claret jugs by putting inside either a few buckshot and shaking them about in a cupful of tepid water dashed with ammonia, or else lightly folded squares of stiff brown paper with barely enough ammonia water to moisten. These remove wine incrustations. If the stains are obstinate, fill the decanter with tepid water, add a pinch of borax, and let it

stand. Tiny pills of whiting wet up with alcohol and ammonia, dried, dropped inside, and shaken about, then dissolved out with tepid water, leave the insides clear and bright. So do crushed egg shells.

Wash gilt and Bohemian glass—indeed, any fancy glass—with a very soft brush and tepid white suds, rinse in hotter water, drain almost dry, then polish with absorbent cotton dipped lightly in powdered whiting. Iridescent and bubble glass should not be wiped. Drain instead, and polish when ready to use with a wisp of cotton. Cameo glass, or any with patterns in relief, must be washed with a stiff brush, in weak suds, rinsed thoroughly, and dried in gentle, steady heat rather than wiped.

Pressed Glass: Wash and rinse in water the same temperature, drain, but not too long, and wipe. Beware of linty towels. Be sure to run cloth or mop inside water glasses, otherwise they become dull quickly. Wash pitchers the same way; water leaves sediment—accumulations of it are hard to remove. Imitation cuttings must be brushed—they had better

be eschewed. Plain, clear surfaces are much handsomer. Bowls set one in the other should have paper between. Load no glass thing heavily—the rumble or jar of a passing wagon may cause breakage if you do.

Annealing Glass: Annealing lessens sensibly the risk of breakage. Pack the glass snugly in a boiler, fill with cold water, bring to a boil, keep simmering three to four hours, then throw over a thick cloth and let cool very slowly. Remove only when fully cold. Especially useful for thin tumblers, lamp chimneys, and finger bowls. Put a board or a handful of clean sticks in the bottom of the boiler, so the heat shall not break things set lowest.

Knives and Forks: Have a pitcher just tall enough to hold knives up to the handle. Do not quite fill it with very hot borax suds, stand knives in it, and leave till other things are out of the way, then wash blades, wipe off handles, rinse very quickly in clear tepid water, wipe dry, polish with a clean chamois, and hold with a clean cloth in putting away.

This to save finger marks which grow often to stains or tarnishes upon knives seldom used. All-silver knives can be treated the same as other silver or plated things—still pitcher-washing is as good for them as any other. Ivory handles or pearl ones, or those of stag-horn or composition, all are injured by either soaking or very hot water. Carving-sets are frequently defaced hopelessly by rubbing the handles with scouring-soap. Instead use only lather, washing it off instantly. If suspicious of grease in the seam, wrap a fine-pointed skewer in thin cloth and run all around, pressing hard. Wipe knife handles very dry, else lay them for ten minutes in gentle heat to expel possible moisture around the rivets.

Restoring Antique Furniture: Take out grease or ink spots (see section Spots and Stains), then go over with a turpentine cloth sopping wet, rub and rub and rub. Follow with an alcohol cloth and more rubbing, then a wash in strong hot suds, followed by rubbing dry. Now take stock of the surface. If there are dents, raise them by laying on very wet

blotting-paper and drying it with a blazing-hot iron. Repeat if necessary—steam does the work. Sandpaper away scratches, or rub them with emery and a little oil, or scrape with broken glass. Go over again with turpentine to remove the last traces of varnish or grime. Then sandpaper to a new surface, and either oil, varnish, or give a wax finish (see section Renovators).

Before resurfacing drive up loose dowels, wedging them tight, glue afresh rickety joins, strengthening them further with slender brads driven in from the under side. Glue broken bits in place—if they are missing, make the break smooth and fit into it a new piece. Cut the old wood, slanting outward—thus it is possible to drive very short brads from underneath. A vise helps greatly in such repairs—the harder held the pieces, the firmer and less visible the join. After it is dry, sandpaper; if the new wood fails to match the old, stain and rub down before waxing or polishing. Tiny gaps can be filled with putty mixed with dry color approaching that of the

wood. This will take either oil stain or a wax finish.

Tighten rickety drawers so they slide easily. Remedy bad feet by chiseling out shattered wood and putting in plugs of sound wood to hold the castors. Glue in the new plugs, also nail them fast. Grease the points of nails to save splitting the old wood. Set them invisibly and drive gently, but see that they go fully home. Remove glass or brass mounting while resurfacing. Clean and brighten them (see section Brass) before replacing. Tighten metal linings about keyholes with putty, put on inside. All padding, upholstery, or baize tops must, of course, be taken wholly away. Save them, no matter how ragged, as patterns for new stuff.

Refinish and repair frames thus stripped before recovering. Very handsome things had better be put in professional hands unless you have practised upon plainer ones. It is a waste of strength and material to put handsome new covers over musty padding or to botch and pucker hopelessly through inex-

perience. In the courage of her economies a clever woman learns quickly the knack of upholstery. Minute directions are impossible —each sofa or couch or easy chair is so much a law unto itself. In a general way, have all necessary things handy—as covering muslin, webbing, springs, tacks, twine, upholsterer's needles, moss or curled hair, brads in variety, sharp shears, and stout pliers for dragging through reluctant needles. Press out old covers and use as patterns for the new. Model your work as nearly as possible on what you took away. Remember always before fastening on covers to mark the middle of them and set it accurately to the middle of the frame, tacking it thence both ways. Pad arms and backs first, then basket-weave webbing across the bottom, drawing it very taut, put on springs, fasten them with twine to the webbing, lay thin cloth over, put a thick layer of stuffing upon it, then fit the muslin cover and tack smoothly to the frame. Tuft or leave plain according to style and period. Cut the ornamental covering very accurately, sew together,

following the original, fit smooth, and cover the edges with gimp. With figured material, cut so the boldest figure shall appear in the middle of back and seat or equidistant from ends of the panels of long sofas. Practise upon something cheap—here as everywhere else experience is the best teacher.

Care of Antiques: Old mahogany, rosewood, ebony, cherry, or walnut differ little in their requirements. Each and several, they film over. To brighten, wash in warm (not hot) naphtha soapsuds, wetting only a little space at a time, wiping it quickly with a cloth wrung from clear hot water, and as quickly rubbing dry. Washing complete, rub hard with old silk or flannel, then apply either French polish, piano polish, or wax finish (see section Renovators). Put this on with a soft cloth and rub in until the surface burns your hand. Washing is necessary about half yearly, except in rooms where there is a great deal of gas or candlelight and much greasy vapor. Dinner tables in steady use ought to be washed and polished monthly. Rub deep

carvings with chamois over the point of a blunt skewer, changing its place every little while.

Brass Bedsteads: Respect their lacquer. Keep water far from them, likewise alcohol, gasolene, or naphtha. Smears may be wiped off with cloths slightly damp, followed by wiping with one dry and soft. Wipe dust away with softened cheesecloth, remove finger marks by gentle rubbing with crumpled soft silk or old flannel. Have a thick soft brush to take dust from carving or curled rails. Wipe off grease with soft flannel and polish the spot with a very little sifted chalk or whiting on a clean cloth. Tarnish is a proof that lacquer has been destroyed—the remedy is relacquering, but mitigate until that is possible by oxalic acid or vinegar and salt (see section Renovators).

Brass trimmings upon enamel bedsteads, cribs, etc., need the same care. So do brass frames, trays, etc. Elaborate chasings can be brightened without injury by coating thickly with powdered starch, letting it stand a day, then brushing it away.

Mission Furniture and Fumed Oak: Dust real mission pieces with a soft damp cloth followed by a dry one barely sprinkled with turpentine. Use any good leather dressing on seats and backs. Neat's-foot oil and beeswax, equal quantities, melted over hot water with twice their bulk of turpentine, is a good thing, and safe. Apply soft but not liquid, put on barely enough to rub over the leather, and rub until absorbed. For fumed and Flemish oak use a soft, thick dust brush, followed by a thick cloth slightly dampened. If greasy or grimy, wash very quickly in hot naphtha soapsuds, wipe dry, and rub until hot. Once a year rub very lightly over with sweet oil, turpentine, and alcohol, equal parts, shaken well together. Varnished pieces can have thin white varnish instead of alcohol. Put on with flannel and rub till hot.

Gilt Furniture: Dust well, and either sift on whiting, let stand an hour, and brush off or cover a little at a time with whiting and alcohol, as thick as cream, let stand three minutes, wipe with a damp cloth, and rub dry

with old silk or flannel. Take away specks of whiting or tarnish with a swab of chalk tied in silk and wet with alcohol. Cork sawdust tied tight in chamois makes a good burnisher if high polish is desired. Garlands, bow knots, and traceries need to be rubbed out with a blunt skewer inside a clean leather and polished the same way, using silk or flannel in place of leather.

Gilt Frames: Cover with the cream of whiting and alcohol after wiping and brushing away all possible dust. Remove and polish as above directed. Repair breaks and chippings with plaster wet with white of egg, and paint with the finest gold paint, then burnish. Take off fly specks with a cloth dipped in alcohol, and rub away any obstinate dark specks or remnant of whiting with the same cloth.

Upholstered Furniture: Cover the stuffings with a bath towel, whip lightly, shaking the towel whenever it shows dust, then brush evenly with a soft bristle brush, wipe out the tuftings with a swab of cotton tied in silk on

the point of a blunt skewer. Wipe quickly all over with a flannel wrung dry out of hot water, following with a cloth wet in alcohol. Change or wash the cloths as they grow dirty, especially upon delicate colors. Neither cloths nor swabs must be wet enough to leave marks. Alcohol, properly used, will leave no trace upon anything. Wash the wood in white soapsuds, about blood-warm, wipe dry, and rub with a flannel sprinkled with kerosene. This for ordinary wood; very fine things, and especially inlaid ones, had better have sweet oil and turpentine on the polishing-cloth, and not too much.

Upholstery can be dry-cleaned with starch and whiting sifted together and applied thickly all over it. Let stand a day, in sunshine if possible, then brush off, going over and over. If there are grimy spaces, wet them with alcohol before putting on the powder. Brush hard, and if flecks remain take them off with a cloth wet in alcohol.

Wicker Furniture: Scrub raw wicker with a stiff brush and white soapsuds, rinse, dry

quickly, then brush over with turpentine, sweet oil, and alcohol, equal parts, mixed, then one-fifth their bulk of thin varnish added. Coat well. When dry, rub over with a thick soft cloth.

Dust gilt or enameled wicker very clean, wash quickly in weak tepid suds, wipe, and sift on whiting and corn starch, let stand half an hour, and brush off. Dry-cleaning alone suffices for things not much soiled. Instead of sifting, the starch and chalk or whiting may be tied tight in coarse net and used as a swab. Take out spots and stains (see section Spots and Stains) before cleaning.

Porch Furniture: Porch furniture, whether rattan, rustic, or bamboo, needs only to be dusted, well and quickly, washed in tepid suds, dried, and rubbed liberally all over with crude kerosene and creosoted turpentine (see section Renovators). Dry in air, but away from sun; do the work, however, if possible, upon a dry, sunny day.

Enameled Iron: Resurface things as they chip (see section Making Whole). Wash clean

in tepid suds after dusting, wipe dry, then rub over lightly with sweet oil and alcohol, equal parts, with a teaspoonful of thin varnish added to the pint and well shaken.

Sundry Preventions: Crumple tissue paper thickly over upholstered furniture before putting on covers—it saves from wear, dust, and fading. Newspapers pasted into big sheets and spread over floor, bed, dresser, and couch in spare rooms likewise catch dust and stop light. They can be gathered up in a few minutes; take care, though, to lift edges first and shake dust inward, then fold. Where sunshine falls upon matting a double thickness of paper saves fading. Narrow lengths either to hang or pin about draperies will keep the draperies fresh. Paper is as nearly impervious to dust as almost anything known. Paper bags tied over gas globes, brass door knobs, and candlesticks prevent both dust and tarnish. Also there is no better summer ambush for articles of "bigotry and virtue" than a thick swathing of tissue paper inside a paper bag. Newspaper has further the merit of discourag-

ing moths—they hate printers' ink the same as other plunderers. Shut down windows upon newspaper, letting it fall well over the inner sill, and there will be no fading of paint there nor cakings of dust.

Glue rounds of felt to the feet of all things not furnished with castors if you would save polished floors from marking. A brad or two, driven upward, the heads well sunk, will add stability. Old soft hats will furnish the rounds. Instead, you may use a contrivance now in market, which is practically the same thing, also cheap and convenient.

V

MAKING WHOLE

Rickety Furniture: Scrape or file away old glue from loosened joins, cover with fresh glue very hot (see section Renovators). Tie fast together or put in a vise, protecting the jaws of it with thick paper, and let stand two days. Reinforce then underneath with iron—a light angle iron for corners, strap iron with holes punched along each edge for straight breaks. Small light metal hinges often answer admirably. Screw everything firmly in place, then scrape away oozing of glue outside, sandpaper, and refinish.

A jagged break needs glue extra thick and hot. Brush it well into broken fibers, both ends, press them together, fasten firmly, let harden, scrape away oozings, and screw on strap iron with holes an inch apart in the

edges. Put it inside or underneath, and if it shows, as on chair or table legs, paint to match the wood, and varnish when dry.

Fine brads, driven in alternately, slantwise, on the under side, will hold cracks fast, but not so fast as strap iron. Hinges set in an angle need a little wood gouged away so they may lie flat against the wood. Fill gaps in a splintered surface with putty colored to match.

Glass and China: No cement ever made at home or commercially will bear long soaking in hot water or suds. Hard usage is also impossible. Notwithstanding, mending is well worth while, wherefore save the pieces, and especially save tiny splinters. Otherwise your mending will be vain. Twice a year have a mending-day, saving up breakage against it. Work at a steady table set in good light but not glaring. Have a white table cover, a bowl of hot water, a cup of alcohol, plenty of clean rags, several camel's-hair brushes of varying size, a tumbler of water to hold them when not in use, plenty of twine, tying-tape, new rubber bands in variety, a pair of swinging weights, and on the

floor, out of the way, a box half full of damp earth or sand. You need in addition squares of deal or cardboard for setting out of the way mended things. Also a pound of putty mixed stiff and, if mending ornaments, gold paint and colors in powder.

With a simple clean fracture, as across a platter, wash edges very clean, using a brush and suds, rinse in hot water, then coat thickly with pure white lead rubbed thicker than cream in raw linseed oil. Set the larger fragment, break up, perpendicularly in the box of sand. It must stand plumb. Fit the other piece to it, and hang evenly across it the swinging weights, which are but a strip of strong cloth doubled up into pockets at each end and filled with buckshot or pebbles, which must balance accurately. Their use is to make the join firm and fine—in fact, barely visible. Leave standing several days, then file or sandpaper off surplus lead. Lead-mending is the most durable of all.

Mend thin china with white of egg and quicklime. Beat the egg stiff, coat clean edges

thickly with it, dust with powdered unslaked lime, press hard together at once, and fasten firmly. The lime sets as in mortar. Sandpaper the break after a week. This is a good cement for opaque glass as well.

Hollow things, as cups, bowls, etc., should be set over crumpled paper upon a round of cloth, with a drawstring in the edge just big enough to cover them halfway. Draw up the string very carefully after mending, and fasten. The secret of good mending is to have things held fast.

Rubber bands help mightily. String half a dozen strong ones on a tape and tie about the neck or base of anything so rounding strings slip. Join the broken part, then put another tape through the bands, and lift it steadily until you can fasten it about the neck or over the top. The bands must be the same size, and draw equally. After tying the tapes set a weight on top of the broken thing. Loop rubber bands around broken-off handles, set them in place, then string a tape through the bands, draw them together, and pass the tape twice around the body of the vessel.

Build up shattered things bit by bit about cores of putty covered with wax paper. This if shape admits taking out the putty. Narrow-mouthed things had better have cores of absorbent cotton wound with wax paper. It can be picked out bit by bit, using a hook. Putty likewise can be dug or rasped out, but not so easily. Things very badly broken need to be mended in sections, joining scraps and fitting in splinters. Fill cavities outside and in with either soft putty or plaster mixed with white of egg. A backing of putty inside seams makes them secure. Keep clean fingers while mending. Also keep broken bits clean. If a mend fails, soak off cement and begin over. White lead must be taken off with turpentine. But failure with it is rare.

If a handle-break goes through in a vase or ewer fit inside the hole a lump of putty, then cement edges, and press together, holding something against the putty and spreading it all over the break. Hard, it makes an indestructible join. Water will not affect it; still, such a vessel had better be kept for show.

Glass: Mend glass as directed for china, but use white cement, gum arabic, or sugar syrup (see section Renovators). Press breaks hard together and fasten firmly. If it is possible to expel every bit of air, the break will be scarcely visible. For colored glass rub dry color smooth in a little white cement and apply with a very fine brush. Repair breaks in gilt glass, after mending, with gold paint. Do the same for gilt china, and touch up with matching colors any flaws in the pattern.

Mending Bric-à-brac: Mend broken ivory with a few drops of fish glue such as shoemakers use. Press very hard together, wipe off oozings clean, fasten, wrap in cotton, then in paper, put in a vise and screw firmly but not too hard. Metal ornaments can be either soldered or repaired with sealing-wax and resin, melted together over boiling water and applied very hot. Join broken bisque and clay figures with white of egg and powdered unslaked lime unless it is possible to get from a potter a little regular luting. Mend torn or loosened leather with fish glue, and put under heavy weight.

Mending Books: Take out of the covers, press square and solid, then paste over the back a strip of stout thin muslin, letting the edges project unpasted an inch either side. Dry under pressure, so the muslin will be fully rounded. Turn back the loose muslin accurately along the edge, paste it plentifully on the outer sides, then lay on the cover, press firmly in place, and dry under weight. When dry, paste in new fly leaves double fold. Paste the outer one to the cover, the inner one only lightly to the book. Removing old fly leaves spotted or defaced makes a better job of it.

Mending Lamps and Candlesticks: Fasten loose lamp collars with white of egg and plaster; make as thick as putty and use quickly. Solder broken metal parts. Dust with powdered resin, lay on the stick of solder, and apply the hot iron. Tinkering thus needs only a little knack. It enables you to stop leaks in zinc or tin—as pipes, shields, and so on. Cooking-vessels are quite another story.

Mending Rubber: This is a parlous busi-

ness at best, still can be done. Get the best rubber cement, have the break very clean, apply, and let harden for a day at least. Breaks in hose, tubes, and so on had better be cloth-covered—after mending, of course. Indeed, the life of such things is trebled by covering them neatly before they break. Cut strips of cloth wide enough to go round, allow half an inch for turned edges, fold down, and whip together around the hose or tube. A big pipe can have a cover of canvas stitched up. Covering protects the surface and takes up a large part of the water strain. Fill breaks in rubber footgear with rubber cement, let harden, then put inside over the break a piece of strong, thin cloth, shaped to fit and coated upon one side with fish glue. The glue goes next the rubber; after it has hardened it takes the strain.

Darning: Darning is an art, so much so one may well say there are torn things not worth a darn. If they are woolen things, mend with rubber tissue, smoothing the tear with a warm iron, then laying on the tissue and fixing it

with a hotter one. Press again on the right side, and clip close any loose fibers.

Linen, Silk, and Stuff: Lay under the break stiff paper spread with net matching in color, press with a warm iron, baste before lifting lightly, take up and baste again about the edges. Match thread to fabric; use a fine needle, go back and forth with very short running stitches, catching the net below, but taking only as deep hold in the outside as will make a firm mend. Beware puckers. When finished, cut away surplus net and press on the wrong side, then under a cloth on the right. If a tiny hole is to be filled in, tack it smooth over stiff paper, then with ravelings of the stuff or thread exactly matching go over the warp way, setting thread for thread, barely catching at the ends, then weave in cross threads, same as the original fabric, and press. Or the hole can be cut to a tiny square after basting on paper and a matched square inserted and darned in all round. This had better have net under it so the join may not pull apart.

Machine-darn table linen as soon as it shows

threadbare spots, putting them in an embroidery hoop and stitching back and forth the way of the missing threads. White net underneath strengthens, but with napkins and tea cloths it is better left off. A cloth broken along the middle fold can be darned thus over net. But it is easier and better to split it evenly, hem the split edges, and trim them with lace, then join the selvages with a row of coarse insertion, herringboned in with coarse linen thread.

Darning Stockings: Children's stockings last much longer for ripping to the calf when new and machine-darning inside them, over the knees, sound old tops. Sew up loosely. Darn strong net or thin stockinet loosely inside heels and toes; when the stockings come in holes, rip out this first application, cover your darning-egg with fresh net, set the hole over it, taking care not to stretch it, whip down all round loosely, then darn as usual, running threads through the net and cutting away surplusage when finished.

Silk stockings should always be darned on net, matching colors of net and darning-floss.

Tack lace insets or embroidery smooth upon white stiff paper and fill in breaks with lace stitches or new embroidery. Mend a running break—colloquially, a ladder—by catching the errant stitch, sewing it fast, then filling the raveled space with very fine herringbone. Fill holes in the instep, or heel, above slipper height, with loose buttonhole stitches in matching silk, going across and back, catching each stitch after the first row in the top of the one below it. Make neither tight nor slack. Infinite patience and a very fine crochet hook enable one to fill such breaks with real stocking-weaving. Ravel the break to a line, take up the stitches on a very fine thread, then fasten on silk and draw up in loops, keeping them on the needle. Fasten to the side and work back, drawing a new stitch through each one already on the needle. Repeat till the hole is full, then draw stitches through those in the upper edge, which has been likewise raveled straight. Only very costly stockings are worth such pains.

Coarse Mending: Boys and men wear holes

at knees, elbows, and on seats. Rip seams, cut the holes square, match new squares, and stitch, press, and sew up. Seat holes need not be cut clear across—only as far as the break. Cut corners diagonally the depth of a seam, but not too deep. Lacking cloth for such repairs, take note when clothes show threadbare in such spots, lay other cloth under, and machine-darn thickly with matching thread, fine rather than coarse. Such prevention often outlasts the patch cure besides being more presentable.

Mending Bed Clothes: Fine threadbare blankets are worth darning. Wash well and darn with soft wool, using a large-eyed needle. Avoid puckering. Darn warp way first, then go across. Cut ragged edges smooth, and overcast loosely with colored wool rather than bind. Darn tears on net, using silk or flax, rather fine. Beware making mends hard and lumpy. Comforts should be untacked, the stuffing, whether cotton, wool, or down, aired and washed at need, the outsides made into rags, and new covers provided for the padding.

Cheesecloth unbleached lasts and launders well. Make pocket covers of it, half a yard deep, for the tops of comforts breaking there and nowhere else.

Old muslin rarely pays for mending more elaborate than running together slits. Wide sheets can have the thin centers torn out, the selvages joined, and raw edges hemmed, thus turning them into single-bed size. Handsome linen sheets, when they break along the hemstitching, should be cut there, hemmed neatly each side, and joined with strong narrow linen insertion, or beading, or linen braid crocheted in a straight line down either side. Embroidered pillow and bolster cases, when the body wears, should have the embroidery cut off and joined thus with insertion or crochet work to new bodies—it will last as long. Handsome monograms and *motifs* should be transferred from old linen to new. Cut out, neatly baste on new stuff, and sew down all round with fine needle, thread, and stitches. If there are holes in the pattern, pierce them and sew over well, using slightly coarser thread.

Press before sewing, and be careful not to draw the work.

Mending Lace: Transfer figures from heavy laces, such as hand-run Spanish, to new net grounds, first cleaning them carefully, and dipping, if rusty, in stale beer or water in which a raw Irish potato has been grated. Drain without squeezing, press while damp, then cut out and arrange upon the new ground, which has been stretched smooth over paper.

Point lace, being needle-made, can be needle-mended as good as new. Tack smooth upon waxed linen or stiff paper, study the breaks, and fill them with the same stitch, using the same thread. If the ground is badly broken, expedite work by laying under a bit of fine net, matching the mesh, and sewing the figures to it. Lace stitches can be learned from any book on needlework, and are none of them difficult. Irish crochet wears out all over commonly—tears or breaks, though, can be filled with a crochet hook, matching stitch and thread.

Mend lace curtains by laying new net under breaks and either sewing figures to it or, in case

of tender old fabrics, wetting with starch and pressing with a hot iron. The starch mend will last as long as the curtain. Tiny tears can be thus starch-mended to advantage at any stage.

Furniture: Threadbare coverings, as damask, brocatelle, and tapestry, require deft darning with a fine needle—several fine needles, indeed, and matched silks. Follow the pattern as nearly as possible in putting in stitches. Put worn hangings into an embroidery frame and work boldly in coarse silks or wool, keeping to the color scheme and using as far as possible the woven pattern, but making the new figures hide blemishes. Remove linings before embroidering, press on the wrong side, and, if too limp, stiffen slightly with gum water (see section Renovators).

Fur Sewing and Mending: Fur sewing takes courage as much as skill. All fur is mended before making up. Art lies in cutting patches accurately and setting them in so the fur lies with that around it. To fill in a moth-eaten spot rip out linings and enough seams

to let the fur lie flat, then chalk-mark the smallest space that will remove the moth patch. Cut through along the mark with a sharp-pointed knife, then lay the hole upon the patch fur and shift until it matches in color and growth. Mark all round, take off the garment, cut the patch with your sharp knife just outside the marking. Fit into the hole, tack lightly in four places, turn, sew the cut edges together, taking stitches close and barely deep enough to hold. Turn every little while, smooth seam, and look for puckers; if any rip, sew over. Sewing done, press seam hard with the thimble on something flat, then turn and press on right side with the end of the thumb. Manipulate until the skin edges lie one against the other. Fur garments can be remodeled at home with just such sewing. Shape, piece, or mend, sew together, and reline. Very tiny bits can be used many ways, wherefore save them religiously. Tails that have been partly moth-eaten or lost hair should have the bare lengths cut out, the remnants neatly joined. Long furs, such as marten,

mink, skunk, and fox, are not easier than seal, beaver, and so on, but less apt to show bungling work. Astrakan is so soft and crinkly it sews almost like cloth.

Carpets, Matting, and Rugs: Make carpets as clean as possible before mending. Darn with wool and upholsterer's needles as they lie on the floor, matching thread to pattern, unless the pattern is worn away. Cut bad spots square, or to straight edges, snip corners, turn under edges, fit in a square, turn down its edges, trimming at corners to avoid lumps, safety-pin at each corner, turn over and whip turned edges fast, then cover with damp cloth and press. Shift stair carpets often enough to get equal wear all over. Have an extra step length and turn it under at top or bottom to make shifting easy.

Dyeing helps a faded carpet mightily. Put it down clean with thick paper under, wipe over with clarified ox gall in tepid water, then with clear water, wringing the cloth dry, then paint with a thick soft brush dipped lightly in hot dye. Use the color predominant in the room,

no matter about the pattern. Rub the dye in well, but do not slop nor sop it. Treat fine matting, especially in rug form, the same way. Figures will show through, but not unpleasantly. Even a grass rug takes color readily. Hang smooth and wet thoroughly, let stand to set, then wash with weak suds. Dye on both sides. Carpets and mattings must be dyed on one side only and washed lightly, after the color sets, with suds, then wiped over with either vinegar and water or weak alum water.

Rug-mending needs a volume; here it gets only a paragraph. For breaks, tears, moth-eaten or worn spots lay smooth upon something soft and sleazy—wool crash is excellent, so is basket-woven serge. Flannel will answer; at a pinch so will burlap. Fasten so thread runs true with those of the rug. If the original fabric shows appreciably, darn it down on the patch, matching the darning-wool to the colors. If there is a yawning hole, put the wool double in a very big needle, stick through from the top, bring up again in almost the same place.

Tie to the end above, stick back, stick up again, repeat, varying thread, until the whole space is covered with woolly loops. Cut them through, then trim smooth with very sharp shears, comb with a coarse comb, and trim again. Moth-eaten moquette carpet can be treated the same way, using as many needles as there are colors in the pattern.

Care of Gloves: Pull off gloves over the hand, not by tugging at finger tips; this is the first commandment. The second is, Never crumple them. Let lie open from the hand until dry, then smooth, wrap in tissue paper, and put away. Sew fastenings the minute they show loose. Mend at the first ripped stitch. Glove powder shaken inside before putting away after wearing keeps them fresher. Either patch holes in thumb and fingers with very thin kid, else cut off the worn sections almost to the palm, shape new sections from old kid, sew on, then sew in. Color gray spots on the fingers of black kid gloves with a few drops of ink rubbed well through other drops of sweet oil. In cleaning with gasolene put on

gloves, fasten smooth, and begin work at the top of the wrist—there will be circles otherwise, especially in long gloves. Wash as though washing hands, using a very soft cloth or wisp of cotton. Change gasolene as soon as dirty. Rub afterward well with starch and whiting, powdered.

Cleaning Furs: Brush well, comb twice—against grain and with it—wipe over with soft flannel, then with a wisp of cotton tied in old silk and dipped lightly in gasolene or benzine or ether. Ether is best for white furs. Work quickly, changing the cloth if it grows dirty. Comb up again, and sift over hot cornmeal or sifted sawdust, rub it well through the fur, up, down, crosswise, shake out, and hang to air. White furs after shaking out should be covered thick with starch and whiting in fine powder, mixed with enough powder blue to clear. Let lie several days, then shake out, brush hard, and wipe over very quickly with a soft damp cloth. Dry-clean light and fancy linings by gentle, steady rubbing with a swab of starch and whiting tied in soft silk or cheesecloth.

Put a few drops of ether or gasolene on soiled spots, rub hard with the swab, then with a clean cloth, dipped in powdered chalk.

Furs worn in dusty wind or a foul atmosphere need to be well combed, brushed against the grain, and aired quickly. Dry wet furs in air, but away from heat. Stretch and knead them several times while drying to keep the skin pliable. Shake hard at first, hang smooth, and let drain. Unless very wet, only dampness will reach the skin if they are so treated. Snow shaken off before melting is a help rather than a hurt. Indeed, a good way to clean fur rugs is to drag them, hair down, over dry snow. Clean on the floor by sprinkling thickly with hot meal or sawdust, rubbing in well and brushing out, then combing.

VI

MAKING AND MAKING OVER

Wherewithal to make of is the first requisite. Here follow some simple tests easily applicable and well worth while. Use upon samples, and buy accordingly. Things over-cheap, it may be said in passing, carry their condemnation in their price. Buying them is extravagance, since they cost as much in time, trouble, and often in money for making up as sound stuffs and make no adequate return in wear.

Silk: Test silk three ways — by tearing, scraping with the thumb nail, and burning. Try to tear a raw edge across the filling. If it is easily done the filling is either artificial or so loaded it will give no wear. Weak warp is even worse—with warp and filling both easily rent, the stuff is wholly bad. Pull out a few threads both ways and test their strength

separately. Easy breaking means that they are loaded with earthy or metal salts to give weight and firmness without wear. Scrape the surface diagonally with the thumb nail. If threads slip under the scraping, let that particular silk alone. Rub well between the fingers—pure silk feels smooth and soft; that which is loaded, crisp, even harsh. Some silks have the face pure, the back loaded—wherefore test both sides. End by burning a bit. Real silk does not burn readily, and leaves a black ash. Weighted or loaded silk flashes up, burns swiftly, and leaves behind a dull-red ash.

Woolens: Test by raveling out and burning. Untwist a raveled thread—fibers of even, moderate length show pure wool. If there are a few fibers with clots all along them the cloth is most shoddy—that is to say, old wool ground up and mixed before spinning with a little new. After-treatment makes it look well, but there is mighty little wear. Snap a raveling between the hands—the harder the breaking the better the goods. Soak a few threads

in a little alcohol. This to test the color. A tinge in the alcohol is to be expected, but if it becomes deep-colored, and especially if it becomes muddy, the dyeing is bad. Cotton mixture before spinning betrays itself in burning. Light a few threads or a snippet—the smell will tell the truth.

Linen: Test linen in much the same fashion: ravel, untwist a thread, and draw gently till resolved into original fibers. Cotton will show soft, even a little fuzzy, in spite of mercerizing. Linen is woven from flax fibers, which are always straight and thready, no matter how fine. Burning gives out the smell of cotton where there is an appreciable mixture. Test for fading by wetting in white soapsuds and drying in sunshine or in front of a fire.

Cottons: Prints, muslin, lawns, sheeting, and so on, should be torn across and lengthwise to test strength, nail-scraped, and rubbed betwixt the fingers to discover if they are dressed too much, and dried in sunshine for fading. Use will soften the fastest colors. In buying for children get extra stuff and send it to wash each

time with the frocks, so when needed for remaking there shall be no glaring contrast.

Forethought: Begin before the beginning if you would sew easily. Set a machine, well cleaned and oiled, where the light will fall over the operator's shoulder. For dressmaking, cover the floor with a sheet of unbleached muslin tacked down smooth. Have a form for fitting, a tall mirror, a table, with drop leaves if possible, and two bentwood chairs, with a low rocker for basting and pressing in. At the right hand of it hang on the wall a thin board with wire nails driven from the back in treble row. Upon one row stick basting-spools, upon others spools of silk, cotton, and twist. Upon a shorter upper row put cheap thimbles. Have screw hooks at bottom for hanging shears, small scissors, tape measure, pencil, and needle book. A screw eye in each upper corner of the board slipped over nails or screw-hooks will hold it fast.

Hang a similar board on the wall back of the machine, and furnish the nails in it with spools of thread—all sorts the machine may require.

Put a hook at bottom for special machine scissors, and hang upon another hook a small, flat, open pocket to hold wisps of absorbent cotton for wiping off oil, a tiny bottle of alcohol for removing spots of it, and a couple of finger stalls and two short bandages to save pricked fingers from making blood spots. A starch bag, very porous, for covering such spots instantly, is also advisable with fine light-colored work.

Tack against the wall over the table a square of denim holding three long pockets, set crosswise, for patterns. Keep patterns folded flat, not rolled. Press smooth before using, and let lie till cool, so they will not curl. Hang a small well-filled pincushion below the pattern pockets, also leaves of flannel filled with basting-needles. Set close by a firm-standing waste basket with a wide mouth. Throw into it all useless clippings as fast as made.

Cutting Out: Spread plain-surfaced things, as silk, linen, serge, and lighter woolens, double upon the table, which must be at full length. Lay on patterns, having regard to warp and

woof threads. Let warp run up and down, woof around. In cutting a bodice the woof threads should make a sort of belt. Thus they pull true, and the seams are an easy bias. Lay on the whole pattern as nearly as space allows, and study economy of material in arranging the pieces, but not at the cost of getting threads wrong. Cut with sharp shears, taking care to allow for seams when requisite. Lay off pieces as cut out, but keep the cloth steady by means of light weights. Patterns are best pinned in place, but with long lines, as skirts or draperies, books laid on as weights are better, besides being easier.

Things with a nap, as broadcloth and corduroy, must not be cut with cloth double from each end. If the goods is double-fold, cutting double is desirable. Otherwise cut so the nap runs the same in each piece. This also applies in case of figured stuffs with a decided up and down. To make a waist or coat pattern smaller lay a crosswise plait from armhole to edge, and cross it with a lengthwise one of equal width. Enlarge a pattern by cutting

it across instead of plaiting it and pasting in strips of paper. Alter skirt lengths usually at the bottom; either fold up or allow extra. If too wide, fold down along each edge to keep proportions.

Basting: Baste shoulder seams with the upper half of the fronts stretched tight, the back held a little full. Pressing heals the puckers, which give the smooth fit over the hollow of the shoulder not otherwise attainable. Use fine firm thread for basting, with a large-eyed needle. Take medium running stitches in seams to be fitted; with edges to be held for sewing together make the stitches very long, and set them so far back the stitching will not catch them.

Pressing: Have a small board covered with flannel, then with muslin, for pressing. An alcohol stove for heating irons saves time and trouble. Keep it with the iron inside a handy box, upon which it can be set when lighted. Do not damp woolen things before pressing. Moisten silk very slightly, linen rather more, and cotton, as in linings, most of all. Press

rounding seams, such as armholes and rolling collars, over the end of the board. Press sleeve seams with the small end of the board inside. Sew up and press outer sleeve seams before sewing inner ones. Do the same with very tiny trousers. Where pressing must be done on the right side cover with a thin cloth very slightly dampened.

Things Applied: Lace, insertion, *motifs*, and so on, need to be set on the cloth and sewed firmly in place, then to have the cloth cut out underneath. Turn cut edges back and stitch or sew again. Ribbon trimmings, unless gathered, are best put on by hand, with very long stitches on the wrong side, very short ones on top. Bands or borders applied as hems should be sewed on to the edge, turned over it, not flat with it, then basted down and stitched at the upper edges. Hold true in sewing on—a pucker or stretching ruins the fit. Miter corners very neatly, and stitch upon the wrong side. In putting in a fold or piping baste with the double edge even with the edge of the garment, or the band, then turn over and baste

before stitching. Hold lace a little full on rounding edges so it shall not hoop nor draw.

Make fancy yokes, put on the collar, then arrange smoothly on the form, put over the bodice, fit together, and set a thick row of pins where they are to join. If the bodice edge is finished, pin together—if it is to be sewn in, leave it free. An overlapping yoke had better have the bodice cut almost full height, and the surplus cut away after the yoke is put on.

Making Over: Begin making over by refurbishing—cleaning, dyeing, pressing, turning. Rip, pick out stitches, take out spots, and brush.

Dyeing: Dyeing is easy. Use cotton or woolen dyes according to need. But first wash stuffs very clean. Discharge color by soaking several hours in suds, or cream-of-tartar solution, boiling half an hour in clear water, and dye while still hot. Have a roomy dye pot, drop into it all parts of a garment at once to make the new color uniform. Have the stuff loosely crumpled, stir down instantly with a clean wooden stick. Lift after a minute to

air, stir down again, and finish according to directions. Each dye has its own special limitations. Knitted woolens, as sweaters, caps, and so on, must not be soaked nor boiled, only washed quickly, covered with clear hot water, let stand a minute, then squeezed out and put into the pot. Silk should not be washed unless very dirty; clean with gasolene instead, but wet with clear hot water before dyeing. If it loses body after washing, dip into stale beer or weak gum water (see section Renovators) or else stiffen with weak sugar water, and iron while damp. A black kid glove cut up and boiled in a gallon of water till reduced one half makes a good stiffener for black silk, also for mixtures of silk and wool. This, whether they are dyed or merely washed. So does stale beer.

Tack lace to strips of cloth before dyeing and leave on them till washed and pressed. Dyed net had better be partly dried in crumpled heaps after washing, then stiffened and pressed.

Gasolene-cleaning: Take out spots (see section Spots), then plunge in a clean vessel, pour

on gasolene to cover, wash quickly, laving rather than rubbing or wringing. Change to clean gasolene, wash again, then hang to air at least ten hours. This must be done away from fire or light. Press on the wrong side, and roll around a rod or mailing-tube instead of folding.

Washing Silk and Cloth: Tack, matching pieces together, right sides in, wash double in warm white soapsuds, rinse twice, keeping temperature even, and hang to dry without wringing. Take down when damp, and iron double, going first over one side, then the other. Stiffen by wiping over ahead of the iron with stale beer, glove liquor, or cold coffee or weak tea, for silk; with very thin starch or gum water for woolens. Roll after pressing. Iron cloth the way of the nap, not across it. Figured silk and brocade should be ironed on a soft board.

Freshening Lace: A bath in stale beer with draining afterward freshens rusty black lace, also stiffens it. It must be pressed when barely damp. Clean cream and light laces in

gasolene, using a very little white soap if they are much soiled. Hang to air smooth—pressing hurts the look. Lying in powdered starch and magnesia for a week will often freshen laces. Mend them before cleaning (see section Making Whole). Shake free of powder—dust and grime will go with it—and smooth by laying back and forth between the leaves of a big book and putting on weight.

Trimmings: Clean ribbons, braids, galloons, and fringes in a bath of gasolene, changing at need, hang smooth to air, then press under weights, else roll inside a damp cloth for an hour, then press on the wrong side with a warm (not hot) iron. Wind braid about spools or tubes, and leave a day and night. Comb out fringes and wind around cardboard. In dyeing fringe fold compactly and sew inside a thin bag, then dye as usual. The bag prevents the fringe proper from matting.

As to Turning: Things worn threadbare had better be turned, either with or without dyeing. Darn the threadbare spots, loosely and sparsely, press—on the right side, of

course. Press all over, then take stock of needs and materials. Make the most of every clothes opportunity.

Freshening Velvet: Raise the pile of crushed velvet by stretching over a wet cloth laid on the face of a very hot iron and brushing hard while the steam rises. This answers for spots and streaks—with a crushed surface or one so faded dyeing will help it, make into panne velvet by pressing on the right side while damp, laying the pile all one way. Velveteen and cotton-backed velvet dye poorly. Brush well, tack on a board, and paint with hot dye, using a soft brush. Let stand in air to set, then wash with a cloth and soapsuds, followed by rinsing. Press on the right side while still damp. This gives a surface passable for school hats or caps, or yokes and cuffs on made-over frocks.

Save the Pieces: In cutting down men's clothes use the worn parts to interline smaller new garments. Use the very best for the outside, even though it necessitates piecing. Match threads and figures exactly, sew fast,

and press hard, then piecing hardly shows. Do it before cutting out. With sleazy stuff whip over edges before sewing together. Avoid putting pieced seams where there will be constant pressure.

Adaptation: A jacket or coat worn along seams may be made to serve beautifully for a much smaller person by simply ripping all seams, trimming, and sewing again. Lengthen skirts outgrown by insets of embroidery or contrasting color. Make the waist to match, either with an inset or a deep girdle. Aim to make all changes so they shall look voluntary, not makeshift. In handing down outgrown garments be merciful enough to change them so the new possessor shall not be taunted for wearing. This is not hard; a new yoke, belt, and cuffs will transfigure a garment, to say nothing of the magic wrought by dyeing. Cut, fit, and finish madeovers quite as carefully as new things. Change trimmings—for moral and esthetic effect. Make several dyeings—it is piteous to see a whole family touched up with navy blue or wine-red or pink.

Dyes are so cheap, dyeing so easy, give yourself the satisfaction of variety. If combining materials, dye them one after the other, the heaviest first. It is likely to be deepest. Use the lighter tint according to quantity and taste for foundation or accessories. Remember two good garments, or even one, will do more good than several skimped and spoiled.

Millinery: Steam hats of fancy braid soft, unpick, steam again, sew while soft, shape, and wire. To change color, paint over with dye, let dry thoroughly, then wipe over with a cloth wet in alcohol to remove surplus color. Or wash quickly with white soapsuds, drying in sunlight; or wipe over with alum water. None of these are necessary if the color does not rub off. Or veil with net, chiffon, lace, or grenadine. Cord the brim edge with silk or velvet, and shir the thin stuff inside. Shape by bending while still damp. Trim according to taste and fashion. Hats of beaver can be steamed a very little, then pressed over an improvised block—a fruit jar inverted, a crock, a tin pan, or bucket. Cover with a

damp cloth while pressing. Begin on something of little value, learning by experience. Hats of velvet or silk or lace must be unpicked, freshened, and made up anew, using new shapes. Lingerie hats require simply washing and reshaping over clean frames with fresh or freshened ribbons.

Restore ribbon and velvet as already directed. To improve crushed and faded flowers touch the backs of the petals thickly with gum arabic (see section Renovators), let dry, then dip in gasolene, lave quickly, and pass on into more gasolene which has had a tube of oil color dissolved in it. Work quickly, moving the flower sprays about so they shall not be blotched nor streaked. Lay on soft paper to dry in airy shade. Big flowers—roses, orchids, poppies—had better be separated before dyeing, then remounted. Touching up the hearts with oil color rubbed smooth in a little poppy oil, using a camel's-hair brush, is a further improvement.

Stiff fancy feathers can be dyed, not by dipping, but painting with hot dye, and taking off the surplus by brushing hard when dry with

corn starch and prepared chalk in fine powder. Touch mounting very lightly—they are founded on glue. If ill-colored, conceal them with *choux* of ribbon or velvet or a made ornament.

Fine feathers should go to professionals—at least, until their owners learn to color cheap ones. Draggled soft feathers may be colored with gasolene and tube paint, shaking hard while they dry so there shall be no clotting. Strip off when dry, and tie the flues into pompons about lengths of stiff wire with loops in the end. Wind the wire with silk thread or cover with a spiral of tissue paper. Two or three shades of the same color tied thus make a handsome ornament for any school hat.

Clean white and light plumes by sprinkling very lightly with gasolene, then burying a week in corn starch and magnesia. Shake out the powder, beat the plumes steadily but gently against the palm, then comb very gently with a coarse clean comb, and hold in the steam of a kettle. Curl, if you like, by drawing the flues, a few at a time, over the edge of a blunt

knife, taking care to draw so steadily there is no breaking.

Ornaments: Mark what you wish—buckle, butterfly, star, crescent, dagger, or quill—accurately upon rather fine buckram, sew fine wire over the outlines, then cut out neatly. Cover with silk or velvet. Make a butterfly body of velvet very slightly padded with wings of silk. Sew firm, turning stuff well over edges, then sew on beads, any sort you like. Make them imitate butterfly markings, cover a quill as though flues, fill star surfaces completely, but simply edge crescents and buckles. After edging put inside bigger beads, of contrasting color. The beading done, cover the whole under side neatly with soft thin silk or net. Quills need a stout center wire. Crystal, with a tip of gold beads or silver and bronze or jet with silver and rhinestones, deftly managed make effective ornaments.

VII

REMEDYING SPOTS, STAINS, AND TARNISH

Grease Spots in Wood: Scour unpainted wood with clean sand after pouring strong lye upon the grease spot. If it is very obstinate, cover with a paste of prepared chalk, corn starch, and whiting wet with ammonia, let stand two days, and scour. Grease stays on varnished surfaces; wash it off with warm borax soapsuds and follow, after wiping dry, by a hard rubbing with alcohol and turpentine mixed. Machine oil must be taken out with either gasolene or alcohol, then scoured with cold suds—heat sets it.

Dust greasy walls thickly with powdered chalk or whiting, brush off after a day, and repeat. For a small but staring spot lay chalk thickly between net, hold it flat against the spot, with a very hot iron over it. Commonly

this will take up the grease. Chalk or whiting wet with alcohol to a thin paste and left to dry on grease spots, then gently brushed off, will remove grease. But with paper badly spotted it is best to take it off and put on a fresh length.

Machine oil on garments old or new must be taken out with gasolene, else washed in white soap and cold water. If spots are black as well as greasy, lay them face down upon a thick cloth and pour alcohol or gasolene through, not rubbing the spot proper, but sawing it back and forth against the cloth underneath—thus the black is not imbedded in the fabric. Lay thin things spotted face down and dab hard repeatedly with a swab of cotton tied in net and wet with gasolene. Move the spots to clean surfaces, and swab till clean. Lay silk and gauze, especially delicately colored ones, over a layer of calcined magnesia mixed with corn starch, and pour through either grain alcohol or chloroform. Wet very lightly a ring around the spot of unspotted fabric and work from it inward to the spot. This to save annoying circles.

Take grease out of woolens with a flood of

gasolene, changing it as it grows dirty. If caked dirt shows afterward, wash with naphtha soap, applying lather to the spot, holding a very hot iron a little way from it for a minute, then washing off with hot water. Instead of the iron you may hold the spot to the spout of a boiling kettle, letting the steam penetrate it. Greasy coat collars and heavy garments blotched with spilled food demand washing in suds besides the washing in gasolene.

For a greasy carpet mix whiting and corn-meal, make hot, sift on thickly, cover with gasolene, and rub hard and quickly until the gasoléne evaporates, then sweep very clean and wipe with a damp cloth. If gasolene involves fire risks, leave the powder standing for several days, sweep off, and repeat if the grease is not all gone.

Axle-grease spots or any other partly resinous must be softened with oil, then taken out with gasolene or turpentine. Washing, even boiling, sets them. It is the same with linseed-oil spots. Take them out with turpentine followed by gasolene.

Road Stains, whether from mud, asphalt,

tar, oil dirt, or oil proper, are as easy to get as they are hard to get rid of. Let mud cakes and flakes severely alone until dry—wiping while wet smears them and gives a firmer hold on the fabric underneath. A soft semi-fluid mud, if it can be dipped almost instantly in clear water, laved without touching, then have water poured through from the back, will be apt not to leave a mark—so wash whenever such washing is possible. Where it is impossible, hold the stained surface mud side down until dry, then rub and brush well before attempting to get rid of the mark. Stiff mud left to dry undisturbed will come away leaving but a faint mark. If it is clay mud, pour boiling water through it from the wrong side in a steady stream for at least a minute. Wet as small a space as possible, stretch it smooth, let dry, brush or rub with coarse velvet, cover with a cream of French chalk, starch, and alcohol, let dry, and brush off; commonly the stain goes with it. This for silk or wool. Wash fabrics need only to be well laundered after the boiling-water treatment.

Grimy mud needs to be well wet with kerosene, let stand an hour, then cleaned with either alcohol or gasolene. Gasolene or benzine will also take out spots of tar and asphalt, but they come away quicker and cleaner if first wet with turpentine, then greased on both sides with soft lard, and let stand a while. Dip in the gasolene, soiled side out, and change the gasolene as soon as it looks dark. Bold big stains may demand three changes. After the stain is out spread the fabric smooth and wipe all round the gasolened space with a cloth dipped in more gasolene to prevent circles. Soften oil marks or those from oily dirt by wetting thoroughly with kerosene, washing out later in gasolene as directed for tar. Very fine things can be cleaned with ether or alcohol instead of gasolene, pouring through the spot and rubbing with a wisp of cotton.

Take grease from paper, as books or prints, by laying on thickly powdered borax and calcined magnesia, and keeping warm for several days. Shut books tight upon the powder and put under moderate weight. Or

iron over the powder with a very hot iron, shake off, apply fresh, and tie or put under weight. A tender old print, much soiled, should be pasted on a thin cloth and cleaned with a damp, soapy cloth, then, after drying, covered both sides with chalk, left several days, then shaken out and ironed on the wrong side, with the right against a soft clean cloth. Mitigate grease on leather bindings with the chalk pad and hot iron—it is rarely wholly removable. Plain calf admits of gasolene, but for anything else dry cleaning alone is safe.

Paint and Varnish: Soak hardened metallic paint in turpentine till softened, then remove with gasolene, alcohol, or chloroform. Chloroform is the thing for fine fabrics of delicate colors. Use alcohol on white stuff, swabbing with an upward motion. Varnish requires little beyond the turpentine treatment. Earth paints and calcimine demand washing in soapsuds to get rid of the color. Remove paint from floors or windows with strong hot soda water or else a cloth well wet in turpentine. Gasolene will likewise remove it, but is more

apt to smear. Plate glass or fine mirrors should be polished with whiting and alcohol after the spots have been removed. Wet to a cream, rub on, let stand awhile, then rub off with clean cloths.

Ice-cream and Gelatine: Such spots must be soaked in clear cold water for at least an hour. If on garments that forbid soaking, lay the spot upon a folded damp cloth, put another over it, and press with moderate weight for an hour. Then wipe off on both sides with borax water, weak and cold, followed by several rinsings in clear cold water. Shift the spot to a clean place now and then. When clean pin it smooth between thick clothes and press dry with a moderate iron. Wash fabrics, of course, can be laundered after soaking.

Fruit Stains: Soak fresh fruit stains half an hour in cold water, then pour boiling water through them and dry quickly. If they have been set by soap and boiling, touch them with Javelle water (see section Renovators), washing it out quickly. Use only on white things—it

takes out color as well as stains. Some stains on colored things can be taken out harmlessly by covering with salt and vinegar and leaving two hours in the sun. Tomato juice and salt in sunshine is another prescription—with a bright tin underneath. An apple cut in half and laid under a set stain in sunshine is likewise effectual. Take care, though, to wash the material well in cold water so there may not be a fresh apple stain.

Ammonia removes acid discolorations; it also mitigates perspiration marks. Use the spirits, and follow with alcohol and water, dabbed on lightly.

Wine Stains: Wet wine stains with alcohol or whisky and soak an hour in cold water, else pour boiling water through them with the fabric held taut, and dry before laundering. This for table linen. Stained silk or cloth must be dabbed many times with tepid water, pressing with dry cloths between dabbings. Do not make wet enough to leave circles. Shake finely powdered chalk on thickly when the dabbing is done, let it lie for a day, then brush

off, and if a mark remains dab with alcohol and water, blood warm, or hold the stain with the wrong side next a steaming spout, wiping it off well as soon as it is damp.

Ink Stains: If ink is spilled on a carpet, take up every bit possible with warm, damp cloths, letting them lie to absorb it. Follow with cloths wet in cold, sweet milk, rubbing and dabbing vigorously. Wash afterward with clear hot water, then sift on, while damp, cornmeal or dry sawdust and let stand a day, brush off, and wipe the spot over with alcohol. Lacking cloths, crumpled paper, newspaper, or blotting-paper can be used to take up the ink. Never wipe it, and take up about the edges first, to save spreading.

Take stains from wood with oxalic-acid solution (see section Renovators). Reduce one half with boiling water, wet the stain, wipe off with clear, hot water; if stain remains, repeat the acid. Use the acid on white things ink-stained, wetting them first with boiling water and holding the stain in steam or close to a very hot iron for a minute or two after dipping

in the acid. Wash out the acid with clear water, as hot as can be borne.

Take ink stains from paper by laying it on a thick cloth, putting on a drop or two of acid, covering with another cloth, and pressing with a hot iron. Remove to a clean, wet cloth, cover, and press again.

Oxalic acid must not be used full strength on silk or woolens. Weaken two-thirds with boiling water, and pour boiling water through the stain after wetting with the acid. Test the color; if the acid destroys it, try either covering the stain with a paste of French chalk and alcohol, letting dry and brushing off, or dropping blazing tallow through from the wrong side, and later removing it with gasolene or chloroform, the same as an ordinary grease mark. The tallow must be left on several days so it may combine with the ink.

Tar and Asphalt: Rub tar spots with soft grease, let lie, and remove with gasolene or by washing in hot suds. Asphalt should be well wet with kerosene, left to stand, then washed

out in turpentine or alcohol. Soap sets it hopelessly if applied at first.

Grass Stains: Rub molasses well into the stains, let lie overnight, then wash out with tepid water, repeating if the stain still shows. If a brown mark is left, wet with weak chloride of lime water (see section Renovators) and hang in hot sunshine or close to a fire.

Iron Rust: Take out with oxalic acid the same as ink stains. Else cover thickly with salt after wetting in boiling water, lay in sunshine over bright tin, and squeeze on lemon juice or that of a ripe tomato. Wash out in hot water, repeating if necessary.

Mildew: Wet with boiling water, wring dry, then dip in sour milk, lay in sun, and cover thickly with salt. Or beat a raw, ripe apple to a pulp, mix with salt liberally, and spread on the spots in the sun. Salt and lemon, salt and tomato, or oxalic acid will likewise remove mildew. The advantage of fruit processes is that they do no harm to the fabric, which the oxalic acid weakens somewhat, no matter how carefully used. Very fine and choice mildewed

fabrics should be covered with a paste of sifted starch and laid on the grass in sunshine. Wash off paste and repeat till mildew disappears.

Wax Spots: Soften, dip in warm oil, let lie an hour, keeping warm, wash in turpentine, then in alcohol or gasolene.

Perspiration Marks: Try dry-cleaning, sifting upon them over and over and over corn starch, magnesia, and French chalk. Rub lightly after each sifting. If the mark remains, try ether. Make a swab of soft white silk filled with the powder, pour on the ether a little at a time, and dab the swab. Put a drop or so of ammonia spirit upon the swab—not enough to change colors. If ether fails, deluge with chloroform, rubbing inward hard until it evaporates. Such marks are the problem of amateur cleaning—the hardest of all to remove.

Smoke Stains: Shave half a bar of soap into a cup of boiling water, dissolve, add a cup of turpentine, a cup of kerosene, and a half cup of ammonia spirit. Mix, and cover close. Spread on the stain, let stand five minutes,

then rub hard with the lead swab (see section Equipment) and wash off with hot water and a thick cloth. If the stain is on plaster, as around a grate, use a brush instead of the swab, which is, for stone, brick, or marble, a sovereign thing.

Care of Iron: Rust is the bane of iron; grease, its salvation. Coat anything not in use well with hot tallow, and shake over it, still hot, either fine sifted wood ashes or powdered unslacked lime. Wrap in clean newspaper and keep dry. When wanted, brush hard with a stiff brush; there will be a beautiful surface. Anything pitted with rust may as well be thrown away. A merely rusty surface must be greased with clear fat, left standing two days, wiped, washed in clear, very hot water, and greased again. Three greasings should bring it into condition for polishing. Wipe dry, coat with oil, shake on lime, and brush off after twenty-four hours. Any alkali without grease predisposes iron to rust. Eschew soap and soda in cleaning it. Use gasolene or turpentine or even kerosene. A cloth wet in

either will take off smut. Polish with crumpled newspaper and a handful of hot sawdust.

Brass and Copper: Remove tarnish from brass and copper with salt and strong vinegar or oxalic acid (see section Renovators). Rub hard till bright all over, wash in clear, very hot water, then while still hot polish with a clean chamois skin dipped in sweet oil, and a pinch of either whiting or very fine sand. Rub quickly, wipe with soft paper, heat moderately, and set away. This gives the mellow old look. Copper cooking-vessels must be scoured inside and out, first with the salt and vinegar, then with soap and sand. A greasy cloth rubbed over the outside protects them without being dangerous. If stains are deep enough to demand oxalic acid, be sure to wash afterward with boiling water and borax.

Bronze: Wash bronze with a soft brush in hot, weak borax water, dry quickly, keep warm, and rub all over with a clean cloth wet in turpentine with the barest suspicion of wax. It must not coat the metal, hardly even film it. Make bone-dry before setting away.

Pewter: Remove spots with a swab of whiting lightly dipped in oil. Wash in weak suds, rinse well with boiling water, dry, and polish with hot sand and a stiff brush.

Silver Tarnish: Tarnish, like a bad habit, must be checked in the beginning. Prevention is better than cure. Keep big things, when not in use, well wrapped in wax paper with blue paper outside that, and absorbent cotton added. Put inside canton-flannel bags, tie tight, and keep dark and dry. Watch all things not thus ambushed closely. Remove spots as soon as visible, either with salt and whiting wet with borax water or ammonia and French chalk. Rub hard and quickly, wash off, wipe dry, and polish with dry whiting or plate powder, or what you will. Treat egg-stained spoons with wet salt. Fortnightly at least wash every bit of silver in sight in warm borax soapsuds, rinse in boiling water, dry with clean towels, and rub lightly with sifted whiting. Cover chasings and engraving with wet whiting, let dry, and brush it off. For things in high relief fold chamois skin over the point of a blunt skewer

—thus you can rub the deeps. Count at each washing and keep sets together. Upon a damp cleaning day lay a trayful of small things in a half-warm oven, letting them stay till hot and dry.

Clean toilet silver with oxalic acid of one-third strength, taking care to touch with it nothing but the metal. Wipe with a cloth wrung very dry out of hot water, and polish with a chamois dipped in alcohol and whiting. Wrap a cloth about the bristles in cleaning brush backs, and wipe with old silk after the polishing.

Things Gilded: Wipe dust carefully from anything gilded with a soft silk cloth, then polish with a clean chamois sprinkled lightly with alcohol and dipped in thrice-sifted whiting. Rub steadily but not hard. Blow dust from deep carvings with a hand bellows unless a vacuum cleaner is in use.

CHAPTER VIII

FOOD: CHOOSING AND KEEPING

Flour: Perfect flour has a slight yellow tinge and a faint, pleasant smell, especially after wetting. Dazzling whiteness indicates bleaching; a gray tinge or minute black specks, showing only under the microscope, grinding from spoiled grain. Test by gripping a handful—if it remains the shape of the hand and shows the lines of the palm, buy it. Gluten is a most desirable element. Test for it by wetting a pinch to a stiff dough, and washing the starch out of it in cold water. The greater and tougher the stringy residue the greater the gluten content. Wet another pinch very soft, take it betwixt thumb and finger, and try to spin a thread. If it spins, all well; if it does not, but makes only blobs on the finger tips, there is likely to have been corn ground with

the wheat. Another test for corn admixture is to dry a pinch, but not scorch it, and rub between the finger tips. Pure wheat flour will not feel gritty, but corn, no matter how finely ground, remains a little rough.

Set flour barrels a little above the floor, and do not use the same one continuously. Any wooden container may become a harbor for insects. A japanned tin can, emptied and aired monthly, is best for keeping flour, meal, or oatmeal in bulk. All should be kept where it is dry, airy, and free of smells, as all take up taints very readily.

Cornmeal: Fresh water-ground cornmeal has a pleasant smell, and runs through the fingers without caking or clotting. A musty odor shows it is too old. Meal from white flint corn is much the most desirable. Sift it at need—the bran helps to keep it. Cornmeal kiln-dried and bolted, as it has to be for the grocers to save it from spoiling, is, in a sort a libel on the real thing. In it there is not much choice save between fine and coarse grinding. Fine-ground makes clammy bread,

hence is to be avoided. But even kiln-drying should not quite take away the original fragrance. Perfect meal shows under the microscope round white grains like fairy hail.

Oatmeal: Beware that which has much grain dust between the grains. Examine carefully a double handful before buying in quantity; if you find even one trace of weevil, reject it. Weevil and sundry mites—*Acari* in scientific parlance—are the bane of grain foods if they are kept over long. Hence the caution of keeping them in bright metal away from dampness and molds.

Buckwheat Flour: Fresh buckwheat flour is of a slightly tawny cast and a lively velvet feel. Mustiness means age—at first there is hardly any smell. Clotting or caking indicates dampness either of grain or storage, hence a product below grade.

Grits and Hominy: Judge by the absence of grain dust and the even grinding; grains the same size approximately cook evenly. Examine a sprinkle through a magnifying-glass, and if there are signs of weevil or mites do not

buy at any price. A pocket magnifier is cheap and handy, also it may save you many times its cost in a single month.

Coffee: Green coffee beans break with a clean fracture, and if the break is ragged or spongy there has been mold or heating. Roasted beans should show one half very dark brown, the other half black but not scorched. Crack between the teeth; you can taste scorching. Fresh-ground coffee is stronger and more flavorous than that ground in bulk. Also there is less chance of adulteration. To test for adulteration, stir a pinch of ground coffee into a glass of cold water. Pure coffee settles to the bottom, leaving hardly a trace of color. Chicory will rise to the top, also making a kind of scum. Adulteration with roasted grain or bread or the artificial beans will color the water more or less deeply. Keep coffee in bright tin or glass, tightly closed, away from light, where it is dry and cool.

Tea: Tea is largely a matter of taste and brands, also prices. Very cheap tea is undesirable, being commonly adulterated with spent

tea leaves. Tests vary as much as brands. A safe and easy one is to infuse a pinch of tea one minute in boiling water, pour off one half, and let the other half stand, keeping at almost boiling heat for ten minutes. Pour off and compare in smell and taste with the first. Artificial color, if present, will show as dregs in the long steeping and reveal itself further in a faint metallic taste. Various copper salts are the commonest coloring matters, and, though the quantities are too small to be immediately dangerous, constant use may develop stomach trouble. Tea is best kept air-tight, dark, dry, and warm.

Butter: Beware butter too yellow, especially if winter-packed. Butter colors are harmless in the main, but some constitutions are intolerant of them. Look for firm texture slightly grained and a lively, agreeable smell. A sour smell and white specks show something to let alone. Keep tightly covered, dark, and cool, away from any possibility of taints.

Lard: If you do not know, experimentally, good fresh lard, get leaf fat, try it out, taking

care not to scorch it, and use the product as a standard. Lard must be firm, but not hard, even-textured throughout, and with almost no smell. Your nose, if permitted, will tell you if it is either scorched or rancid—the two unpardonable faults. From grain-fed pork it is clear white, with now and then a faint cream tinge. Keep in glass or bright tin, tightly closed, where it is cool and dark.

Cheese: As to choice of cheese one cannot dogmatize; so much depends on individual palates. Get the best you can afford of your chosen sort. Good cheese cuts grainy rather than waxy—it is not too greasy, reasonably solid, and free, of course, of mites or weevil. Cut a section from a whole cheese, then butter well the cut surfaces, cover with wax paper, and keep dark, dry, and cool. Wrap the cut-out section in wax paper likewise, and keep in a covered crock for daily use. Keep fancy, strong-smelling cheeses well wrapped in tin-foil, then in wax paper, and laid inside a covered crock, set in a cool place.

Beef: Prime beef comes only from well-

fatted animals, neither too young nor too old. Fat and suet are white, inclining faintly to cream; lean a dark, healthy red, which becomes brighter by hanging. Very yellow fat and scarlet lean indicate a condition below first class. The meat should not cut dry when raw, but neither should liquid follow the cleaver.

Mutton and Lamb: The fat over the ribs is the best index of quality; if it is half an inch or more, the animal was thriving. The fat should be white with hardly a trace of yellow, the lean a fine purply red, not too deep. Follow your nose in buying all manner of butcher's stuff, remembering cooking will never work the miracle of making sound the unsound. Good spring lamb has very white fat, with lean inclining to pinkish red. If the rib fat covers the whole surface, all is well. The caul fat should be in lumps as big as the finger end. A strong sheepy smell of either lamb or mutton shows animals badly dressed, or, in case of mutton, too old. Press a bare finger hard upon the outer surface; if the meat feels grainy there

has probably been treatment with some preservative.

Pork: Clear white fat and lean of a lively pink-red show perfect pork. It cannot well be too fat, yet if there are lumps or inflamed spots in the kidney fat, let it alone. Press hard on the skin; it should be elastic, and be sure there is only a fleshy smell. Sniff the big joints—spoiling begins there. Sniff sausage likewise, and reject if too highly seasoned. The seasoning may disguise less pleasant smells. It should be red and white speckled, the color predominant; five pounds of lean to three of fat is the best proportion.

Salt Meats: Streaky bacon should have white fat and dark-red lean—yellow fat is undesirable. It must smell lightly of smoke and have also a tang of salt. Salt pork must be very white and firm, the lean of it showing a dull-pale red. Hams must have white fat, thick and firm, and lean of a rich, clear red just the least inclined to purple. Look close around the bone; if the fat there is white and firm the ham is all right. It must, of course, have been

well smoked. But too thick smoke, shown by a black-brown color, is undesirable. Corned beef should be clear red, firm, and clean-smelling. Dried beef should have a firm, dark outside and be a dark, clear red within. If it shaves to slivers partly transparent, it is very nearly perfect.

Poultry: All poultry save capons can be too fat. But it had better be too fat than too lean. Choose light-colored fat and firm pinky-white flesh. See that combs are fresh-colored, leg joints flexible, and skin soft. Much hard, deep-yellow fat indicates age. Milk-fed poultry, so called, is mainly so called—it may have got milk, but much else went with it. With ducks and geese, pull open the eyelids; if the eyes are filmed the birds are likely to have been killed too long. Freezing injures the quality of poultry. Dry-picked poultry is much more desirable than that which is scalded. To test for age look at the legs—scaliness is a sure mark of age. Press hard upon the breast bone; in a young fowl it bends a little, in an old one it is rigid.

Keeping Fresh Meat and Poultry: Never put meat or poultry in contact with ice, neither lay them flat in dish or pan. Put a rack under the meat, then set the pan in the refrigerator, first wiping the meat with a damp (not wet) cloth. This until cooking-time. Things to be kept several days should be well wiped, laid on waterproof paper, have lumps of charcoal put round and about, then wrapped, tied, put in cheese-cloth bags, and hung where it is cool and airy. Lacking such hanging space, lay them on racks close to ice.

Salt Fish: Keep salt fish, whether dry or in brine, well away from all else. A good place for them is a big box with a tight cover, the cracks filled inside with putty and covered outside with paper. Put a shelf across for boxes and cartons; stand kits on the floor. Hinge on the top as a door, and fasten with hook and staple. Set the box on short legs, else put bricks under the corners.

Things in Glass: Glass jars, whether of preserves, fruit, or vegetables, had better be wrapped in paper, held on by a rubber band, and

set so as not to touch. They should be kept where it is dark, dry, clean, and cool, on slat shelves or plank ones bored full of half-inch holes. Light, through its weird actinic rays, plays hob with flavors, and may even induce worse things. Yet jellies set in full sunlight for, say, ten days gain a richer texture and keep better ever after.

Fruit and Vegetable Storage: With a cool, dry, airy cellar have movable bins of slats with firm, low legs, whitewashed yearly inside and out. Store in them apples, potatoes, sweet and Irish, turnips, carrots, beets, what not. Lay grapes, choosing perfect bunches only, upon swinging slat shelves and cover with cheese cloth. In a temperature around forty degrees there will be no rotting nor drying up, provided only sound things have been brought in.

Canning Things: The secret of success in canning things is perfect sterilization. Do the work if possible in bright, windy weather, out doors if you can; if not, in a kitchen very clean and well aired. Bring into it no specked or

rotten things—decay is a ferment the same as yeast, and spores of it spread through the air. It is better to prepare things outside. Drop apples, pears, or peaches in water as pared or hulled, and keep them covered until ready to cook. Have two kettles of syrup, one bubbling, the other barely simmering. Have a boiler of boiling water for the jars. Empty a jar just at the moment of using, fill it running over with boiling-hot fruit and seal instantly. The simmering-kettle is for filling up the other. Keep the bubbling-kettle filled with syrup to capacity, drop in barely fruit enough to fill a jar, cook for five minutes, then seal. A few cloves and a blade of mace in the top of each can improve flavor. Use at least half weight of sugar to fruit—three-fifths is better. Invert after sealing and screw tops harder when cool. If a can leaks, empty it, reheat, fill, and seal securely. Set hot jars away from draughts until cool. Remember, though, the fruit which comes out of your cans will be just as good and no better than what went into them. Therefore spend your

time and strength only on good fruit, ripe, but not over-ripe.

Outdoor Pantries: Save in the very hottest weather edibles, cooked or raw, keep better in fresh air than in a refrigerator. An outdoor pantry can be set on a back porch or on legs in a shady yard, or even made fast to the wall. A goods box, whitewashed, set firmly about waist high, furnished with shelves inside and a door of screen wire, will hold meat, milk, cakes, pies, bread, surplus fruit, raw or cooked, and keep them to the queen's taste. Have clean bags with drawstrings to slip over dishes of meat, as hams, roasts, a fowl in wait for Sunday dinner. Lay raw meat upon lumps of charcoal, put other lumps over it, and wrap tight in clean cloth, then lay upon a rack or slat shelf. Put milk in a bright tin bucket with a tight cover, stand it in a pan, put in half inch of water, then wrap the milk bucket with a thick cloth, letting it touch the water. It will keep damp and, by evaporation, cool the milk.

Where ice is hard to get have holes made

with a post-hole digger, a foot across and four feet deep. Fit stout wooden tops to them big enough to lap an inch all round. Put a handle on firmly and screw a stout hook in the middle underneath. Suspend things from this hook by a cord or light chain, as a bucket of milk, or butter, a bottle of wine, water, or grape juice, or a bag of fruit. Fresh meat even can be kept several days, of course wrapping it well before hanging it. Rain ruins this form of cold storage, but for camps, summer bungalows, and so on it is a very present help.

A greater one is a dry well either rock-walled or planked up. Have it seven to eight feet deep, wide enough for a ladder, and set shelves around the edge. Or it may be simply dug, covered, and things let down into it at the end of strings. An abandoned well or cistern comes in handy for such use. If deep and dry, whole carcasses as of lambs, sheep, pigs, or deer can be hung and kept safe.

Dried Fruit: Keep sun-dried fruit in a warm, airy place, sunning it often. Look it over for worms, throw out infested bits, scald

the residue one minute in full boiling water, spread thin, and dry in the oven. In a long damp spell bring dried fruit into the kitchen and hang where heat will strike it, but away from steam. All this applies equally to sun-dried vegetables, such as corn, okra, and green peas, likewise to beans and peas full grown.

Keeping Rich Cake: Plum cake, spice cake, or iced pound cake keep a long time treated thus: Pour a teaspoonful of brandy upon the under side, let it soak in, then wrap the whole loaf in a clean cloth and sprinkle with brandy. Put into an earthen crock with a tight cover, lay a fresh apple on top, and keep shut. Once a week set the crock upon a cooling range until warm through, removing the apple while warming. Put in a fresh apple every fortnight, and renew the brandy treatment at the same time. Plum cake almost demands this keeping, being better for a year of it. Other cakes should not be kept over six months.

Keeping Melons for Christmas: Plant melons so they will ripen a little before frost.

Build a rail pen, floor it two feet above ground, and lay on the floor a foot of corn stalks well packed. Stand other stalks about the edge, then fill in a foot of fresh corn husks. Bed in these the melons, cut each with a short length of vine, and the vine ends dipped in melted paraffine. Wrap the melons in tissue paper, take care not to let them touch nor lie too close to the stalk wall. Cover with another foot of husks, packed down firmly, but not rammed. Over these put more corn stalks, filling the pen with them. Lay on a slanted roof of boards, weighting them in place.

Fresh Eggs: A strictly fresh egg has a tiny air space at either end betwixt shell and lining. Lying makes the air bubbles rise and join. A fresh egg sinks in water end down, one less fresh commonly lies on its side. Break an egg, empty the shell, look in the ends; if the spaces are lacking it is not fresh. Or boil hard—a fresh yolk will have white evenly all round. After some days the yolk will be near the shell or pressing against it.

IX

HOUSE PLANTS, WINDOW BOXES, CUT FLOWERS

Soil: Soil for pots and boxes must be very rich and light. Mix it of one-half well-rotted animal manure, one-quarter leaf mold or rotted sods, and one-quarter good loam. If the loam is heavy clay make it one-half clean sand. Heap and keep under cover, away from sun-baking and the leaching of rain. Sift for use. Sprinkle now and again to keep it moist.

Pots: Use clean pots and sound. Break up cracked ones for drainage. Wash pots as soon as empty, stack, and stand in air. Wash again before using, dry, then wipe over outside with a cloth wet in copperas water. This to prevent the annoying green scum. Repeat the wiping over with copperas water about once a month.

Keep pot surfaces clean—their dull red, so kept, is more artistic than any jardinière. Further, it makes for plant health—a clean pot admits air to the roots.

Window Boxes: Window boxes must be well drained. If set outside it is imperative that they be made fast. Lacking regular window guards, use hooks and staples. Paint wooden boxes dull green outside and white inside. Choose tile ones to harmonize with walls and windows. Have uniform boxes for a row of windows—this applies equally to boxes proper and what grows in them. Indoor boxes should have zinc trays fitted to them, with strips laid across to insure drainage.

Potting: Pots must be proportioned to their contents. A hyacinth bulb will thrive in a four-inch pot. A clump of three will grow in a six-inch one; it should be shallow. A shallow eight-inch pot will hold a dozen tulips or Roman hyacinths or two dozen crocuses. Broad pots, rather shallow, are best for all manner of bulbs save the tall-growing lilies, such as the Amaryllis family, Auratum, and

Easter lilies. Plant rooted cuttings in two-inch pots, shifting them as they grow. Over-potting is a drawback, especially with flowering things. Do not shift until the pot is filled with roots—test for that by turning out—and shift to the next size. Seasonal bulbs rarely require shifting, but those kept year in and out must be separated from their offsets and given fresh earth. In shifting put an inch of broken pot in first, arranging a big bit over the hole, fill in a little earth, then set the plant upon it; the ball at its root should come within an inch of the top. Hold it plumb and fill in sifted earth about it, shaking the pot gently after each handful. Shake hard when the pot is full; fill in chinks around the edge and put a little fresh earth on top, then water freely but without splashing. Let it drain and set in place. Always have something underneath to catch the drip. Glazed ware is better than the clay saucers—they make damp spots.

Plant bulbs their own depth in earth except the finer lilies. Set them only a little way in earth. It is safer to make a little hole in the

earth, put in a handful of clean sand, and bed the bulb in the sand. Keep very wet—sand will not rot the bulb surface. Fill up with soil an inch higher, but keep it away from the bulb with a sand blanket, and put a very thin layer of sand on top. Plant ordinary bulbs in succession from September to December, keep damp and dark for some weeks to insure root growth, then bring to light, water, and fertilize, turning every three days to make symmetrical.

Plant Choice: No plant will live long without light—few will thrive without more or less sunlight. The green-and-white Aspidastra is the hardiest in this respect. Plants used for interior decoration must be often shifted, set in light, fertilized, and bathed till thrifty, while others in good condition take their places. Weekly changes will maintain a proper effect. Palms and ferns are most satisfactory for such uses; flowering things get ragged very quickly. Begonias carefully tended and not allowed to dry out nor get hot make a brave showing. So do wax-leafed woody things—dwarf orange

and lemon trees, rubber trees, dwarf evergreens and box trees.

Plants for a North Light: Fuschia stands pre-eminent, next to that thrifty ferns, ivy of both sorts, dwarf evergreens, spiderwort, moneywort, and trailing box vine. An hour or two of sunlight will suffice for all these, other conditions to their mind; also, in their season, for pansies, violets, and the dwarf Japanese morning glories so wonderful in color and texture.

Filling Window Boxes: Make fast, put a layer of broken pot over the bottom, upon that a very thin layer of excelsior. Cover two inches deep with fine earth, then arrange roots of your trailers along the outer edge and bank up with more earth. Next put in the plants, crowding them rather thickly, pack earth around and about them, water freely, make sure all plants stand straight, then shower plentifully, using a fine sprinkler. Water every day—twice daily in very hot weather—shower every other day, and fertilize once a week. This if the plants thrive. If they turn a sickly yellow, starve a bit, after watering

plentifully with water a little too hot to bear your hand in.

Choice of Window Plants: Flowering geraniums deserve first place for a season's bloom. White and pink ones smothered in green look better against a red brick wall than scarlet or crimson. But scarlet and white, or scarlet and crimson with feathery green, such as asparagus sprengeri, are beautiful against white walls, brown or buff ones, or any sort of stone. Pansies with alyssum edges are lovely while they last. Choose them for early spring, putting in geraniums or primroses later. Potted bulbs show beautifully in window boxes with edges of trailing green. Rose geraniums in window boxes help to drive away flies. Piazza boxes in midsummer have nothing more effective than the savage splendors of gladioli. Plant in double row, starting the bulbs in pots and setting out when a foot high. Nasturtiums also make a splendid show. So do all the tribe of begonia, provided the sun is not too hot. Morning and evening rays suit them.

Palms and Ferns: Small thrifty plants need to be shifted yearly. After they reach a good size do not shift, fertilize instead. Keep pot surfaces clean, set at least a foot above the floor, water plentifully and regularly, but do not let it stand at the roots. Sprinkle or wipe with a damp cloth weekly, and monthly give a plunge bath in your own bath water. Let stand till barely tepid, then tie a cloth over the earth, and lay your plant on its side in the tub. Splash and scrub well, set upright, drain off water, and shower well with clear, clean water. Bathing thus is the best insurance of health and a protection against the depredations of every-sort of pest.

Roses and Woody Things in General: Only a very few roses are adapted to house culture unless there is a greenhouse for their refreshing. The catalogues name them. Get vigorous year-old plants and bake the earth for planting them at least an hour in a moderate oven. This to insure against the beetle which lives in earth and has no other cure than prevention. Make the earth very fine, sift it

lightly through the roots, water well, put on more earth, wet it, fill up the pot, drench, drain, and set in light, but away from sunlight, for several days. Pinch off any flower buds, also new ones appearing before the rose is well established. After thrifty growth sets in let bloom, but not overbloom. Pinch off all but the most promising buds. Water with tepid suds weekly. In between give liquid manure. Make it strong—roses are gross feeders. Bathe often, keep warm and in light, turning every other day. The many-flowered roses sold around the holidays are good for nothing but to be set out in the border after their bloom is past.

Fuchsias, azaleas, lemon verbenas, the spireas, and genesta require much the same care. Fuchsias, as has been said, do not demand full sun. Also they like a moderate temperature. The others thrive in heat and light. So do camellias and gardenias. These, however, are apt to disappoint anybody without a genius for growing things. Rubber trees too big for the plunge bath must have their

leaves well wiped with white soapsuds, then with clear water. Tall palms demand the same care. All plants need a moist atmosphere, so keep water on radiators and wet sponges over registers. This is as good for people as for plants.

Fertilizers and Fertilizing: Liquid manure is an ideal fertilizer so far as concerns the plants themselves. It has the drawback of a bad odor. To use it set the plants outdoors, give in sufficient quantity, let soak in, then water well with warm water and leave to air some hours. To make, put well-rotted manure in something tight, pour boiling water upon it, stir well, and let stand. Stir again before dipping out—it should be as thick as cream. After using it on window boxes close the windows until the smell is gone. Things too big to move can be fertilized and the windows left open, closing doors—so fertilize in mild weather. The odor will pass in two hours if the tepid watering has been thorough.

Many good commercial fertilizers are almost or quite odorless—ammoniated bone meal, for

example. There is also a fertilizer in lozenge form which is scentless and wonderfully effective. Dissolve a lozenge in boiling water, let stand all night, then stir well and apply. Give a teacup—the same as of liquid manure—to a ten-inch pot, a tablespoonful to a four-inch one, and half that to a thumb pot. A quart will be none too much for a three-foot window box filled with soft-stemmed plants. They demand more than woody plants. Over-fertilizing is bad—it turns leaves yellow and scants bloom. Plants suffer indigestion the same as people. The remedy for it is to set them in a sink or on a grating and pour hot (not boiling) water through the pot until it runs out clear.

Insects and Insecticides: Insects are the pest of house plants. The worst of them are plant lice, mealy bugs, white and black flies, red spider, and the various scales. All are fought with pretty much the same weapons—namely, soap and water, smoke, and eternal vigilance. Greenhouses and hothouses are almost universally infested. Hence every new

plant must be suspected. Do not set it among other plants clean and thrifty for at least a fortnight, and then only after a thorough bath. A plant badly infested had better be thrown away, and quickly. Flies white and black are hardest to fight; they fly away at a touch on the pot. Set the infested plant apart, with a stick standing higher than itself fast in earth, throw a thin cloth over, letting it reach the ground all around, then slip under it a lighted smudge, and set over cloth and plant either a box or a barrel, with paper pasted over the cracks. Let stand two hours, then plunge in a tepid bath, keeping on the cloth until well under water. This to hold in any flies left living. Splash well, drain, and while damp dust with either insect powder or finely crumbled tobacco, putting it on both sides of the leaves.

For plant lice spray thickly with strong tobacco water, leave an hour, then bathe, and dust with more tobacco. A little flowers of sulphur mixed in makes the treatment more effectual. Bathe in suds (carbolic soap, if

possible) next day, and follow with a clear tepid shower.

Red spider is invisible until it appears as red blotches upon foliage. Water, and still more water, combined with smoking cures it. Shower infested plants heavily every day for a fortnight, smoke with tobacco twice a week, and keep well dusted with either tobacco or pyrethrum powder. Mealy bugs, which are white and woolly, as big as grains of wheat, should have a sulphur dusting after smoking and bathing. All the big scales, which are never very numerous unless plants are fatally neglected, should be hand-picked, then the plant well washed with whale-oil soapsuds dashed with carbolic acid. San José scale, which is almost invisible but feels like fine rough sand upon the under sides of leaves and over stalks, is so deadly and difficult any plant found infested should be burned at once, the pot broken, and the earth soaked with boiling water. Cures for it there are, but too difficult for amateurs, withal somewhat dangerous.

Buy tobacco dust, make tobacco water.

Pour a gallon of boiling water upon a pound of tobacco stems, let stand a day, keeping warm, strain and use. Cut the spent stems fine and mix through potting soil. Enough tobacco water to color it mixed in makes a plunge bath more effective against insects. Make smudges thus: put a few slivers of wood or half a dozen matches crossed in a small flat tin, cover with either pyrethrum powder, tobacco dust, cut up stalks, unspent, or flowers of sulphur mixed with fine damp sawdust. Light, see that there is not too much blaze, and set beneath plants. Do not make smudges big enough to give out scalding heat; better two or three small ones if heavy smoke is required.

Red rust and brown scale, the special enemies of palms, need to be washed off with strong carbolic soapsuds and a soft brush before bathing and smoking.

Earth Worms: Lime water is the remedy for earth worms. Stick holes in the earth quite to the bottom, then pour on clear lime water (see section Renovators) till it stands on top. The worms will crawl up to escape it.

Lime water is also good to sweeten sour earth. Give a half cup after the hot-water treatment. Dig up the earth in pots so as to keep a light, clean surface. Green scum, while not dangerous, does not make for plant health.

For Roaches, dip cut potatoes in arsenic mixed with sugar and lay cut side down on the pots and about them. Gather up every morning, dropping instantly into a vessel of boiling water—this to destroy such insects as remain alive. But never put out poison if there are children in the house.

Cuttings: Cuttings root best in clean sand, kept very wet and warm and under glass. Make the cuttings of new wood, neither soft nor fully ripe. Cut with at least two eyes—three are better—slant cuts, and set in sand slantwise, with one eye above the surface. Shift as soon as growth begins fully to thumb pots, and keep the pots plunged in another box of sand. Make geranium cuttings, whether scented or flowering, of healthy stalks full of sap and vigor. June is the best time to make cuttings of lemon verbena, fuchsia, heliotrope,

and roses. Tips of strong shoots from either fuchsia or heliotrope will root then almost for the chance. Chrysanthemums from cuttings of the flower stalk give much finer bloom than those from old roots.

Leaf cuttings are interesting. Tuberous begonias root thus readily. Roses are more difficult. Peg down the leaf on wet sand under glass, make tiny cuts in it, and keep very wet in sunshine. Roots will strike from the cuts after they have calloused.

Summing up, the needs of a house plant are the same as those of a human being—air, light, food, water, cleanliness, and love.

Cut Flowers: Cut flowers early in the morning, stand loosely upright in clean water away from light until they can be arranged. In hot weather sprinkle lightly if arranging must wait, and cover with a light cloth. Florist blossoms must be kept cool and damp; stand the holder in the bathtub, draw three inches of cold water, and spread something over them.

In arranging do not mix nor crowd. Tulips

with only their own stalks and leaves are wonderfully decorative, but a single other bloom makes them blotchy. No green save the featheriest asparagus fern should ever go with flowers which have handsome foliage. Lay fern fronds upon the cloth rather than disfigure with them a centerpiece of roses. Tall, stiff stems, as jonquils, narcissi, and lilies, absolutely require tall, slender holders. So do long-stemmed roses, especially the cloth-yard American Beauties. It is vandalism to put anything with them. Carnations bear massing, but the vase should have space about it. Lilies lose immeasurably by crowding. A single handsome tall stalk gives distinction, where three or four imperfect ones huddled would be commonplace.

Half a dozen roses with fine foliage will make a handsome centerpiece thus: put into a low, flat bowl, rather flaring, a woven-wire cake rack nearly the same size. Cut stalks, if long, to six inches. Use the cut-off stems to mat through the woven wire. Cover well with cold water, then arrange the flowers so each

will show for itself, thrusting the stems between the wires at the proper angle. A wreath of asparagus fern laid on the cloth outside adds much more to the effect than if the green were twined among the flowers. Lacking a cake rack, flatten a big potato after peeling it, make holes in the upper surface with a wire nail, and anchor the stems in them.

Hanging-holders for trailers should have something inside—wet sand or wire net—to hold their contents stable. If a tall flower pot is set in a niche or corner, arrange a light to fall directly on it, as a fairy lamp or tall candle set upon a bracket. Beware of having too many flowers, and particularly too many sorts. Even blossoms can swear at each other—decoratively.

Keeping Cut Flowers Fresh: Flowers sent long distances need special care. Stick the stalks of roses in sections of potato, else seal by dipping in melted paraffine, then roll each separately in wax paper so it forms a tube. Lay the tubes together in a stanch box, cut holes in either end after it is wrapped and tied.

The roses should be between bud and half blow. Chrysanthemums can be sent the same way by either mail or express. So can camellias and gardenias, but they change color so quickly after opening they are hardly worth the trouble.

X

DISINFECTANTS, INSECTS, INSECTICIDES

Quicklime: Put big lumps in broad earthen platters, set on floors of cellars, outhouses, or barns, and slack with copperas water.

Charcoal: Lay lumps in vegetable bins or on cellar shelves. Hang other lumps in bags of coarse net on cellar and pantry walls. Heat every month or so to maintain absorbent power.

Borax: Sprinkle powdered borax freely over smelly places—under sinks, around plumbing, over pantry shelves, and on floors where cans are set. It is so safe, so wholesome, even spilling it is worth while.

Washing-soda: Dissolve a pound in a pint of boiling water and flush sink pipes, refrigerator drains, and set tubs with it.

Copperas (green vitriol, otherwise sulphate

of iron): Dissolve a pound in a gallon of water; it will take several hours. Dilute one-half with boiling water and flush water closets, bath pipes, set bowls, and so forth. Sprinkle thus diluted over smelly earth, as in chicken runs, kennel floors, stall floors, and where garbage stands. Use liberally on garbage, in earth closets, or privies, also on standing water infested with green scum. A gallon added to a pot of whitewash gives a yellow tinge and makes the wash more sanitary.

Bluestone: Bluestone, sulphate of copper, must be dissolved in the same proportions. It is a germicide more than disinfectant, especially valuable where there have been sick animals. Dilute with four times its bulk of boiling water or mix through hot whitewash. It is staple against seed infection, as smuts and molds. The most part of garden seed sprout and grow better for wetting with the dilute solution and drying before planting.

White Vitriol: Sulphate of zinc, a powerful astringent germicide, needs care in handling. Dissolve it, four ounces to the half gallon of

water, strain, and put into clean bottles. Keep dark, corked tightly. Use to clean and disinfect sores from frost bite or indolent ulcers. Dilute with five times as much tepid rain water. Use on the combs of poultry when raw from frost, also for scaly leg and the ail known as "bumble-foot."

Bichloride of Mercury: The king among disinfectants, also one of the deadliest among poisons. Dissolve in boiling rain water, four ounces to the gallon. Let stand; it dissolves slowly. Keep in glass, tightly corked, plainly labeled "poison." Dilute one-half for use in the sick room. But put on full strength when fighting bed bugs.

Bordeaux Mixture: Staple for spraying against molds, etc. One pound blue vitriol dissolved in five gallons rain water and added to one pound powdered unslaked lime mixed to a cream with rain water. Stir well, and strain before spraying. Dilute one-half to three-fourths; if too strong it scorches vegetation.

Kerosene Emulsion: Stir hard together in

an earthen vessel a quart of buttermilk and half a gallon kerosene. Stir with wood until thick and buttery. Use full strength to paint tree trunks and hard branches in winter, but dilute at least ten times for use on green things. Mix with warm water, twenty parts to one for spraying against plant lice. For fighting red spider stir a little sulphur into the emulsion before diluting. Spray late—as near night as possible.

Bisulphide of Lime: Sure death to either animal or plant lice. Mix in equal quantity flowers of sulphur and powdered quicklime, cover two inches with boiling water, boil five hours, filling up and adding more water till there is three times the original quantity. Dilute the result, a brown smelly liquid, one hundred times for use either as wash or spray.

Against Garden Pests: Mix any arsenical powder—London purple, Scheele's green, or Paris green—with its own bulk of flour and twice its bulk of slaked lime, and dust upon plants while damp. Good for potato beetles, squash bugs, flea bugs, grasshoppers, cut

worms, and cabbage worms. Use in a powder gun or tie in a thin bag, fasten it to a long pole and shake so as to coat plants evenly.

Larkspur: Larkspur destroys lice and mites. Sow rather thick, cut when beginning to flower, dry in shade. Strip leaves and buds when full dry, powder, and keep in glass. Save stems and coarse stalks to make tea. Infuse for twelve hours, then boil for two, strain, and reduce by boiling another hour. Use in suds a cup to the quart, or in whitewash a pint to the gallon. Make an ointment by either stewing tender tips in lard or fresh butter in a water bath until the grease is well colored or by putting with it the infusion at full strength and stewing out the water. Stir in a little flowers of sulphur, a teaspoonful to the pint, for use on cattle or horses. Grease back of the ears, under the throat, and along the backbone. Grease poultry under the wings, around the neck, and on top of the head. Blow larkspur powder into the hair of dogs and cats after bathing them.

For Flies and Mosquitoes: Stop the beginnings. Burn or bury garbage. Spray all possible fly beds well with copperas water daily. Be prodigal of whitewash wherever it will stick. Flush drains well with boiling soda water and use copperas water or carbolic suds to spray earth on which waste water discharges. Keep manure piles covered with fresh earth, also wet daily with copperas water. Set fly traps outdoors wherever the pests congregate. Fill a tumbler two-thirds with suds and lay a cardboard over with a hole in the middle. Smear syrup on the underside for bait. Empty twice a day, burning the drowned flies. Boil together two ounces ground black pepper, four ounces sugar, and a cup of sweet milk, set the syrup shallowly in plates—the flies will do the rest. The mixture kills them, but is harmless to anything else. Oil of lavender sprayed will drive out flies temporarily. So will rose geranium bruised to smell strongly. Screen every opening with wire gauze or cheesecloth, make cheesecloth covers, rounds with wire in the hems, to protect hot food, be diligent with

fly paddles, and avoid slopping, also throwing out slops on the ground.

Mosquitoes, say the wise men, are a local issue, bred in standing water. Wherefore leave no water standing, not even a rusty canful. Cover rain barrels with screen wire, pour crude kerosene upon ponds and pools. Begin early, before buds swell. Keep it up until frost. Examine cellars, especially barn cellars. Mosquitoes winter in them. Kill all such lingerers with thick smoke—tobacco smoke or from pyrethrum powder or by touching off a little gunpowder on a plate. Concussion makes the mosquitoes drop; sweep up and burn. Concerted action is imperative. If no man liveth or dieth unto himself, how much less so any man's crop of mosquitoes! Screens and smoke from punk sticks, pyrethrum, and dry pennyroyal are the best weapons against attack. Oil of pennyroyal likewise helps. Smear lightly on forehead, hands, and arms before going to sleep. Wilting leaves of the stately castor bean, also tender branches, hung about will drive out mosquitoes.

Fleas harbor in light litter—hay, straw, leaves, most of all shed hair. Flea-bearing animals have each their own species, which fight to the death. There are also sand fleas. Fight with fire, smoke, water, oil of pennyroyal, and fresh black-walnut leaves. Sprinkle kerosene on the litter suspected; sweep up and burn. Oil sand beds likewise, else drench with copperas water. Wet manure heaps with bichloride solution or bisulphide of mercury. Gather walnut leaves in armfuls and crowd them into places unsafe for oil or fire, as under piazzas, bungalow floors, or low sheds. Put them also about rooms where fleas abound, tied in thick bunches, and laid under beds or in closets. Gasolene where safe is a mighty help. Paint floors and baseboard with it, in default of bichloride solution. Painting with turpentine is also fairly effective. Success is impossible, however, unless the flea-fighting extends to animals as well.

Bed Bugs: Bed bugs demand eternal vigilance, especially in apartments. Make bedrooms and closets as nearly as possible bug

proof by washing, after cleaning thoroughly, with bichloride solution, then filling every crack, cranny, and crevice with soft putty. Lay a thin rope of putty along the baseboard on the floor and crowd down upon it quarter-round molding cut to fit. Nail fast, and paint to match the baseboard. This is an effectual seal for dividing wall on a common floor. Set collars of the stiffest putty around steam pipes where they go in and out. Renew them as often as they crack and crumble, but do not trust to them entirely. Examine everything monthly—bed, furnishings, chairs, boxes, the backs of pictures, books, and stacked papers. Paper in mass is a favorite lurking place. Have white slips for mattresses; remove, turn, examine seams, and wet corners with bichloride. Paint the mattress over lightly with bichloride; it neither stains nor smells. Wipe the bedstead and springs with a cloth wet in it, and drench crannies unwipable. Wipe the backs of pictures and of dressers, in fact, any sheltered and static space. Wipe the floor with bichloride, if bare, and wax or oil afterward.

Sprinkle a carpet or rugs well with bichloride, then sweep with a broom dipped in very hot water. Empty closets, wipe over, examine all accumulations of paper, boxes, etc. A bug overlooked will in a month's space infest a whole house. Couches of rattan, wicker, or upholstered are strongholds of the blood-suckers. Set in air and drench with benzine or gasolene, leave standing a day, and drench again, shaking, brushing, and beating between drenchings.

Wicker clothes hampers and baskets, also baby carriages, are other strongholds. Scald hampers and baskets with boiling-hot soda water, then paint over with turpentine and a little sweet oil. Use gasolene on the carriages, applying with a thick brush rather than drenching. Repeat twice in succession, wash everything washable, and sun for a week.

Moths: Moths in upholstered things must be got rid of the same as bed bugs (see preceding paragraph). Clean rugs thoroughly, spray on both sides with gasolene or strong black-pepper tea, sun well, then roll up between

newspapers, tie fast, wrap spirally with stiff paper, fold ends neatly, slip over them paper bags fitting accurately, paste down edges, paste a strip of paper over the edge of the wrapping. Clean heavy coats with gasolene or benzine, crowd newspaper into the sleeves, crumple more newspaper thickly over the hanger, fasten the coat, slip over it a bag of pasted newspapers, pass the hanger hook up through it, crumple the paper tight around the shank and tie, then fold over the bottom of the paper several times, and fasten with stout wire clips. Moth balls may be slipped in coat pockets, but will hardly be needed if they are hung in a light place.

Store and protect tailor suits much the same. After cleaning fold the skirt belt in six and fasten with a big safety pin to lower bend of the hanger shank, then slip on its newspaper bag and fasten. Put on the coat, then over all a bigger newspaper bag. Put inside wisps of cotton tied up in net, and wet with oil of cedar. One-piece cloth frocks should be hung the same as long coats, but have the skirts folded upward

over a roll of newspapers about midway and pinned or basted to the waist. Store fur coats the same way after cleaning and sunning for several days. Put mothaline bags outside over those of newspaper and sachets of sandalwood in the sleeves. If moths have touched them before storing, lay them for several days on a slat tray in a trunk with a big sponge saturated in gasolene below. Keep the trunk outside and shut tight; gasolene vapor ought to kill the moth eggs. Clean small furs as muffs, tippets, cuffs, sun, sew up tight in old linen, sprinkle well with black-pepper tea, then wrap in newspaper, wipe out their boxes with a cloth dipped in gasolene, put in the wrapped furs, wrap boxes, and slip in paper bags, then fold and paste together the bag ends. If no moth nor egg was inside none will come out.

Fine things, such as camel's-hair shawls, moth-infested should be brushed and sunned, then wrapped in clean linen, over that thick wet towels, over that paper, and laid in a hot oven until the paper scorches. This is equal to superheated steam for moth and egg destruc-

tion, but does no harm to the finest fabric. Sew up in linen and store same as small furs. Steam is also sovereign for moths in carpets where it is unsafe to use gasolene or benzine. Cover the infected spots with thick wet towels, letting them lie a good bit over and iron first around the edges, then all over with blazing-hot irons, changing them as they cease to hiss. Repeat at weekly intervals for a month. After ironing go along the edges, wetting the carpet well with bichloride solution. A carpet to be stored should be sprayed with gasolene after cleaning, then folded over double newspapers, and sprayed at each doubling over with black-pepper tea. A long, narrow bag of moth balls in the deepest fold adds something to insect insurance. Store in light and off the floor. A discarded bed spring is fine to lay such things on. Stand rolled rugs on end if not too long, and a little apart.

A Blanket Box: Make blankets clean and whole, fold in three, lengthwise, roll up over a core of moth balls, sew in old linen, and pack. Fill all crevices in a big packing-case

with putty or plaster wet with egg, paper with plain manila paper, let dry, then paint the paper with oil of cedar. Give two coats. Put over the bottom a sachet of cedar twigs or shavings laid on wadding and tacked between cheesecloth. Pack blankets and woolens on this, tucking smaller cedar sachets into crevices, also moth balls tied in cheesecloth. Put in white things first, lay paper over them, then pack colored ones. Cover with another cedar sachet, tuck paper snugly over it, then shut—the top must be hinged on—and paste paper over the edges. As long as it is unbroken the contents are safe.

Where storage space is lacking use a box couch, making sure with bichloride and gasolene that neither moth nor bed bug lurks inside. Use oil of lavender and pine twigs rather than cedar, omit the sealing with paper, but examine now and then; if you discover the enemy do not halt until he is forever and completely yours.

Roaches and Water Bugs: Powdered borax mixed with sugar kills them. Set it

about in saucers, sprinkle under pipes and on sills, also on the bottom of closets and drawers. Lay clean paper over it. Once a month remove paper, wipe wood, sprinkle again after drying, and put on fresh paper. Burn every dead insect. In cellars or greenhouses mix a little Paris green with the powder, dip into it cut potatoes, and lay them cut side down, in the way of roaches. Gather up each morning, drop in water as gathered, and replace at evening with freshly loaded potatoes. Pour turpentine around water pipes and those for steam heat. Paint the pipes with turpentine, doing it when they are cool. Paint kitchen floors and baseboards after scouring with bichloride of mercury; beware, though, using it higher. Keep borax and sugar on pantry shelves under paper. Paint with turpentine at housecleaning. Fill cracks, crevices, and knotholes with putty. Do the same with tops and rims of set tubs, renewing it as it breaks.

Ants: Ants, black or red, hate the smell of camphor. Make rings of it around dishes of food and pour it into crevices suspected as ant

roads. If they climb by a post or pillar put a tarred bandage around it. Find the nest if possible and destroy it with boiling water or gasolene or kerosene with a little camphor added. Beware of gasolene if the nest is close to any building. Boiling soda water is safe anywhere except about plants. There use strong carbolic soapsuds, blood-warm, with an after-sprinkle of camphor. Gum camphor tied in net and hung in closets or pantries helps to drive ants away.

XI

CARE OF PETS

Dogs: Choose your dog, unless he chooses himself by adopting you, with regard for environment. Big dogs require space—big rooms and grounds outside. Small ones are "in drawing" with apartments or modest houses. Breed is a matter of chance or choice. Toy terriers, toy Pomeranians, spaniels, and pugs fit into restricted menages. St. Bernards, collies, greyhounds, wolf hounds, and hunting-dogs in general are miserable in confinement, also miserably out of place.

Teach him obedience first of all, keep him clean and comfortable, never forget him, feed regularly, give constant access to clean water, and always sufficient exercise. Otherwise don't keep him; neglect is a refinement of cruelty.

Vary the feeding. Dog biscuit day in and out destroys appetite and thrift. Shift every other day to table scraps, oatmeal porridge, cornmeal mush cooked with broth, or raw meat and bones. Give milk almost every day—not too much. Be sparing of the raw meat; a zest suffices. Tiny house dogs ought to have light breakfasts, with a hearty dinner around two o'clock, and nothing more. Dogs running out need much more food, otherwise they get into mischief. A hearty breakfast and dinner with milk and mush at sundown is not too much. Feed all that will be eaten clean; if food is left, diminish the quantity. Leave nothing but bones where a dog may come back to it. Gnawing solid bones helps strength and spirit. Small bones of game or fowl must be given with discretion; they are crunched and swallowed so greedily the sharp ends may do harm if the stomach is too full of them.

A flea-bearing dog is intolerable. Wash in larkspur water (see section Insecticides) or carbolic soapsuds, and comb while in the bath with a fine-tooth comb. Drain off water and

fleas, rinse tub, rinse dog well, dry with coarse soft towels, keep muzzled until fully dry, and away from draughts. When fully dry, part hair and blow in behind the ears and along the spine flowers of sulphur mixed with larkspur powder or pyrethrum powder.

For skin troubles, mange especially, bathe well in hot sulphur soapsuds, rinse dry, and rub well into the affected spots unsalted butter washed clean of milk and made yellow with flowers of sulphur. If the trouble persists and the dog is valuable, consult a vet; the dog, perhaps, needs constitutional treatment.

Kennels and doghouses must be clean and dry, baskets and bedding kept clean and free of vermin. Whitewash kennels and doghouses often, putting larkspur infusion or carbolic acid in the whitewash, else mixing in flowers of sulphur. Scald baskets, dry, and paint with turpentine and sweet oil. Lay bedding outside and drench with gasolene. Burn it if mange appears, else it will reinfect the animal. Do not let dogs sleep haphazard

anywhere they can. Give them comfortable beds, indoors or out.

A dog running free at exercise needs no clothes. On leash, with his keeper merely walking or sauntering, a warm blanket, or, better, a sweater, is essential in cold weather. Keep dogs outdoors as much as possible in hot weather, but do not let them run too much. Provide shade, especially for guard dogs. Teach all dogs, and especially guard dogs, to refuse food from strangers. This is impossible with a hungry dog. Full feeding guards against foraging at large, the thing which gives poisoners the best opportunity.

Dogs perspire only through the tongue, hence the panting after exertion. Let them drink all they will, but have the water clean. Milk is food, not drink. Do not imagine it takes the place of water. Water, free and clean, is held the best preventive of rabies. In case rabies is suspected isolate safely, and observe for at least a week. Pseudo-rabies, induced by fear, kills many more people than the real thing. An ailing dog, or one tired, thirsty,

or lost, will snap at almost anything in his way. Do not on that account condemn him untried to death. Rest, food, and drink, in confinement, will discover his true condition. If madness is proved, kill, quickly and mercifully, burn or bury, disinfect every space he has touched with bichloride of mercury, burn movable boards, litter, ropes, etc. Grass or earth upon which saliva has dropped had better be drenched with kerosene and set on fire.

Cats: Cats likewise suffer rabies; in case of it use the same measures. Cats of fancy breeds are more decorative than plain tabbys, but also more delicate and much less intelligent, withal lacking in affection, and of no use save to look fine.

White cats, especially those with blue eyes, are more savage, less affectionate, and much harder house-broken than black, gray, or tortoise-shell ones. Often the white fellows are deaf. Each and several, cats run wild for reasonable opportunity, yet they bear housing and confinement admirably. They need raw meat, but not too much; a bit of liver or a

fish head every other day suffices. Alternately give bones, with the milk and crumbled bread, which is the mainstay of their diet. Give also at night a saucer of pure milk. Water and catnip, green or dry, should be always accessible. Do not overfeed; cats are dainty gluttons if permitted. Keep them thriving, but not fat—fat and indigestion are the roots of disease.

Rid of fleas as directed for dogs. After drying, confine for some time, first giving a saucer of milk with a teaspoonful of whisky or brandy in it. For skin troubles grease all over with the sulphur and butter, confine so as to keep from getting dirty, and wash well after twenty-four hours in hot suds, rinsing well and drying with soft towels. Repeat at intervals as long as needed. Feed on bread and milk, be lavish of catnip, burn infected bedding, wash and fumigate baskets, or treat with bichloride of mercury (see section Disinfectants).

Belgian Hares and Cavies: Both are vegetable feeders. They will live in small quarters, but do better in bigger ones. Keep

the quarters clean and sanitary with whitewash and disinfectants. If very small, have floors of loose boards which can be taken up and scalded. Feed three times a day with grain, roots, and green stuff. Be liberal of the green stuff. With a grass run the beasts will supply most of it themselves. Scatter the food, and give only as much as will be eaten clean. Suckling mothers need extra feeds, five a day instead of three.

Dust weekly with sifted ashes, corn starch in powder, and flowers of sulphur. Use in dry weather, putting on at night. Have hutches big enough to prevent crowding. Beware letting your pets overrun the space at command.

Birds: Mocking-birds, cardinals, bullfinches and orioles, all of which it is wicked to keep in cages, need very roomy cages, perches with the bark on, much clean sandy earth on the floors, clean grain, green stuff, ripe fruit, and insects, besides the egg-and-potato mixture which is their mainstay. Tie heads of wheat, oats, or millet to the bars, hang lettuce and peppergrass there, also chickweed in season.

Put ripe berries on clean twigs and suspend; force bits of apple and peach between wires close to the perches. Have a swing, a roomy bath, with the usual feed and water cups. Change the water daily, twice in summer. Put one drop of carbolic acid in the bath for insect prevention. Boil eggs twenty minutes, crush the yolk while hot with a freshly boiled Irish potato, season with the least grain of salt and a very little red pepper, and put into the cup. Keep the cage very clean, scald it every three months. Hang it outside in pleasant weather, but never so the sun at midday will strike full on the birds.

Give flies, crickets, earth worms, grasshoppers, but not hairy catepillars, spiders, nor wasps. Mockers sing almost the night through in spring. To silence them cover the cage with something thick, set where it is very dark, then uncover.

Canaries: A long body and thick smooth plumage are marks of a good canary. Males only sing. Coat color varies. German canaries show many shades of yellow besides mot-

tled tints. Yellow-red Norwich birds owe their giddy coats to red pepper in the food. Unless it is given liberally at moulting-time their fine feathers come back dull and pale. Birds are in full song at a year old. Younger, they have rarely been well taught. The range of life is seven to twenty years; the last is possible only with exceptional birds and still more exceptional care.

Teach canaries to deserve the freedom of the room. It helps in many ways. Leave the cage door open; do not coax him out nor force him in except as a last resort. Rather let hunger take him back. He will learn quickly and enjoy flying about.

A metal cage with a movable floor is the one to choose. Wood invites vermin and harbors it distressingly. Hang where it is neither hot nor cold, away from draughts, but with air plenty. Feed regularly, but do not overfeed. Hemp seed are so fattening they must be given sparingly. The regular bird seed sold in packages is excellent if fresh. A dull appearance is against it; canary seed when not stale

is shiny. Empty and fill the seed cup daily, clean the floor, and put down fresh gravel, red and white. Keep cuttlefish bone suspended in the cage, and put in daily some fresh bit of green. Lettuce will answer, but chickweed and peppergrass are better. A pod of Cayenne pepper is good in sharp weather. So is a little hard-boiled egg, lightly dusted with red pepper, or bread crumbs squeezed out of milk and similarly dusted. A droopy bird showing signs of diarrhea should have black-pepper tea to drink, else a strip of fat pork rolled in ground pepper hung where it can be pecked.

Fill the bath every morning. If a bird picks himself after bathing put a few drops of rose water or cologne in the bath. Bare spots from the picking should be rubbed very lightly with sulphur and butter, putting also a little under the wings and back of the neck. Ragged plumage may mean a hardened oil gland. It lies just at the root of the tail and furnishes oil for the coat. Look at it, blowing aside covering feathers. If swollen and inflamed, drop

on warm, weak suds from a medicine dropper, dry very gently, and apply a little vaseline. Repeat daily until the gland frees itself of the cake.

Trim nails discreetly, holding to the light so as to miss the tiny vein in them. If cut, hold the bleeding foot a minute in tepid water, dry, and touch the cut with vaseline.

If breeding, separate the pair when brooding begins. Afterward let both feed the young. Provide soft food twice a day—bread crumbs soaked in milk, scraped apple, mashed hard-boiled egg yolk, in addition to seed and bird manna. As soon as it is safe move the whole family into a fresh, clean cage, and scald and fumigate the other. Mites, the bane of canaries, multiply amazingly. They would be invisible but for their blood color. Feeding by day, they quit their prey at night. Throw a sheet of Canton flannel over cages suspected, remove it quickly by lamplight, and plunge in boiling water. Mites will show on it after death. If they are plenty, shift to a clean cage

at once and repeat the cloth treatment until all are destroyed. Infested cages should be, after scalding, drenched with gasolene and aired for a week. Scalding with bichloride is also effectual; it must be followed by a scalding in clear, boiling water and a fortnight of airing.

Parrots: If the parrot is for company get a gray African—they make the best talkers and are best tempered. For decoration get the scarlet-crested white fellows, or the yellow and green, or blue and scarlet and yellow. Treatment of either is the same; feed fruit, nuts, grain, a little meat, insects, bread, especially cornbread, and cereals cooked stiff. Parrots learn quickly to eat and drink with their owners. Coffee in moderation is good for them, but they must have water besides. Some thrive better for drinking milk; indeed, the creatures are almost uncannily human in many things. Let them bathe at discretion, provide also a dust bath. Have a roomy cage, a tall, branchy perch, and a hoop swing. Never tease nor tantalize; parrots are cross enough with-

out; also jealous. Do not leave free in the room with a small child. Their beaks are cruelly sharp. Lacking insects, give small lumps of raw mutton fat. Keep everything about them very clean.

XII

IN EMERGENCIES

Chimney Blazes: Smother blazing chimneys by throwing salt, damp if possible, on the fire, and setting something flat against the chimney breast.

Blazing Fat: Throw on salt, sand, or ashes; water makes the flame fiercer. Prevent draughts if possible; keep doors and windows shut tight. Turn out oil or gas flames underneath, and keep everything inflammable away from the blaze.

Gas Leaks: Open doors and windows, let accumulations blow out, then hunt for the broken pipe—not with a lamp or candle—and clap on it when found either a blanket of putty or flour dough wet very stiff. Tie in place with broad tape, then wrap with a cloth so as to withstand pressure. But first of all call for

the repair man. With a leak undiscoverable, shut off from the rest of the house and leave windows wide open.

Asphyxiation: Whether from gas or drowning, lay flat, the head a little higher; permit no crowding; resort to artificial respiration—lifting the arms and pressing on the chest systematically, holding the tongue out all the while; rub with alcohol, especially feet and hands; keep in air, and work gently but quickly. In cases of drowning, empty lungs of water first thing by laying face down over a bench or barrel and working the arms.

Fainting: Lay flat, the head lower than the body, loosen clothes, especially about the neck, dash cold water gently in the face, hold ammonia under nostrils, rub wrists and temples with camphor or cologne water, and if the faint persists put mustard at the back of the neck and to the soles of the feet. Insensibility from shock or falling needs slightly different treatment. It may mean concussion; hence, let the head be highest and apply vigorous friction along the spine as well as to

the extremities. Stimulate as soon as swallowing is possible, and move with caution.

Burns: Anything which excludes air without tainting the wound or irritating it further helps a bad burn. Carron oil—a creamy mixture of lime water and sweet oil—applied with a feather, then covered with cotton, either batting or absorbent, gives a measure of relief and is also healing. Soft old linen coated with fresh egg-white laid on and allowed to dry soothes pain. Even a covering with dry flour, if nothing else is handy, is better than leaving the burn bare. But if at all serious, or even is shallow and wide spread, call a doctor instantly, meantime keeping up heart action with stimulants in small doses often repeated.

Breaks and Dislocations: Lay a broken bone straight in a natural position upon a stout cardboard splint shaped to the limb and covered with cotton batting. Bandage limb and splint firmly together, working toward the trunk and keeping the bandage smooth but not too tight. Wet with arnica. This keeps down pain and inflammation, making the sur-

geon's work when he arrives easier for himself and his patient. Reduce dislocations as quickly as possible by stretching the hurt joint steadily and letting another person manipulate the hurt. Often the bone head will snap back in place at a touch; it remains then only to keep it in place. An hour's delay would mean swelling to render the replacing much harder. Wrist and elbow joints in particular are kittle cattle if left to swell. First aid to them means many times preserving use and saving from lifelong disfigurement. But this first aid by no means suffices to make surgical care unnecessary.

Sprains and Strains: Bandage tight, wet the bandages with cold water, and hold in an easy position. A sprained or strained ankle may be almost cured by plunging it into running water and keeping it there some time. Lift out occasionally, then replunge. Strains require rest and bandages. Wet the bandages with arnica. If there is muscle shrinkage later, rub morning and night with chloroform liniment after bathing with hot water and wiping dry.

Chloroform Poisoning: Keep in motion in open air, dose with aromatic spirits of ammonia well diluted, and hold it undiluted to nostrils. Apply electricity to spine; this if conscious. If fallen into a stupor put ice to spine and top of head, hot water to feet, give hard friction with alcohol, or camphor on legs and arms. Use artificial respiration and stimulate gently. Friction or a mustard plaster over the heart is helpful. Let nothing bind or constrict anywhere, and do not cease your efforts at the first signs of lessening stupor.

Narcotic Poisoning: For laudanum, morphine, or opium the treatment is the same. First a strong emetic—mustard and water as thick as pea soup is among the best. Follow it with black coffee as strong as possible. Give all the patient can be made to swallow at short intervals, keep him walking briskly, stripped to the waist, dash ice water on the spine, and tie ice to the back of the neck. Flagellate lightly on shoulders; the tingles help to rouse. Hold aromatic ammonia to his nose every half

minute. If the coffee nauseates, give clear hot water after to make vomiting easy, then after ten minutes more coffee not quite so strong. Permit no stop for several hours; if excretories act properly the danger will then have been past. Electricity is useful, but not indispensable. In desperate cases use every means at hand.

Acid Poisoning: Emollients are the antidotes for acids; emetics wrench and tear seared stomach tissues. No matter what the acid—sulphuric, carbolic, nitric, or oxalic—give something soft and smooth—raw eggs, cream, starch wet as thick as cream, melted lard or butter, olive oil, or even flour and water, followed after a few minutes with magnesia stirred thick in tepid water. Let the patient rest easily, hold ammonia to the nostrils, and put hot-water bags to the feet. Aim to keep up vitality under the shock to vital tissues. In such cases a minute means often the difference between life and death.

Iodine Poison: Use emollients — the very best is thick cooked starch; it has a specific

power to neutralize the drug. Olive oil is next best; it protects the coating of the stomach. But use anything above named rather than nothing. To let a case of poison go by default is against reason and humanity.

Arsenic: Arsenic in all its forms is best fought with raw eggs, especially the whites, and sweet milk or cream. Give a strong emetic afterward, then, when it has acted, more eggs or milk. This should suffice unless the poison has been freely absorbed.

Ptomaine Poisoning: Give an active emetic, followed by a cathartic; keep the patient warm, stimulate with brandy—a teaspoonful every hour; put mustard to wrists, ankles, back of neck, and pit of stomach—this particularly if there is severe pain, cramps, or continued retching. Pains in the head indicate the need of an ice cap.

Mercury Poisoning: Bichloride needs as antidote raw eggs and cream, or oil, with the same external treatment as for ptomaines. Strong emetics are inadvisable, but if the stomach frees itself naturally of the emollients

much poison will come with them. Replace them in smaller quantities, but give nothing else until the doctor comes.

Bites and Stings: Stings from wasps, bees, and ants need treatment with fruit acids—bathe in vinegar or apply a slice of raw apple or peach or a crushed grape. Instant sucking removes part of the poison and relieves the pain to a degree. Always suck bites, as of spiders, unless there are abrasions of tongue and lips. After sucking bathe freely with fresh peroxide of hydrogen, boracic acid, or sugar-of-lead water. A leaf of green plantain, well bruised, bound on a bite or sting when nothing else is at hand keeps down inflammation and mitigates pain. In case of stings make sure the sting proper has not been left in the wound, since its presence might induce blood poisoning.

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